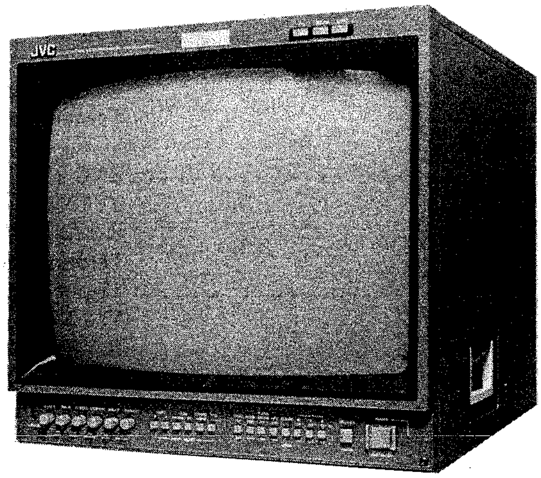
JVC

SERVICE MANUAL

COLOUR VIDEO MONITOR

MODEL VM-R200PSN



SAFETY PRECAUTION

As for safety precautions including electric shock prevention, use of designated components, or safety inspection after servicing, refer to the appended PAL/SECAM-C 870807.

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* SCHEMATIC DIAGRAM (APPENDED)

No. 50058
May 1988

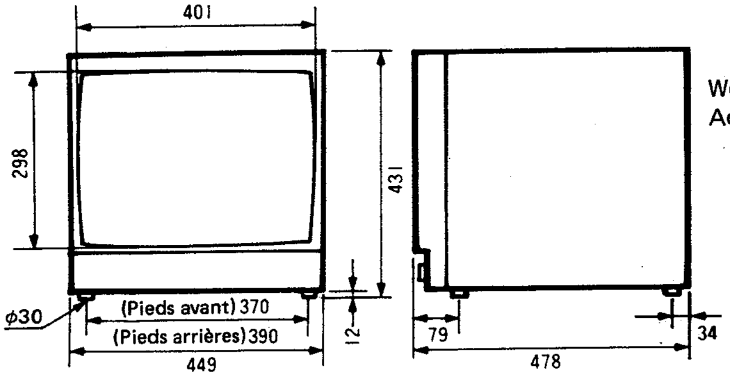
SPECIFICATIONS

Type : Colour video monitor
Colour system : PAL/SECAM/NTSC system
CRT : 20″ (measured diagonally), 90°
deflection, in-line gun medium-high
resolution CRT, tri-dot pitch 0.4 mm
Screen size (HxV) : 399 x 296 mm
Scanning frequency : (H) 15.75 kHz
(V) 50/60 Hz
Horizontal resolution : More than 600 lines
Power requirement : AC220 ~ 240 V 50/60 Hz
Power consumption : 105 W
Composite video input
(VIDEO A/B) : BNC x 4 (2 with bridged output),
1.0 Vp-p, 75 ohms, negative sync
Termination switch provided
(VTR) : 8-pin VTR connector x 1,
1.0 Vp-p, 75 ohms, negative sync
Y/C separate video input : 7-pin connector x 2 (1 with bridged
output)
Y: 1 Vp-p, 75 ohms, negative sync
C: 0.286 Vp-p (burst), 75 ohms
Termination switch provided

Component video inputs
(Y/R-Y/B-Y) : BNC x 6 (3 with bridged output)
Y: 1 Vp-p, 75 ohms, negative sync
R-Y/B-Y: 0.7 Vp-p, 75 ohms
Termination switch provided
(MⅡ) : 12-pin connextor x 1,
Y: 1 Vp-p, 75 ohms, negative sync
R-Y/B-Y: 0.7 Vp-p, 75 ohms
(BETACAM) : 12-pin connector x 1
Y: 1 Vp-p, 75 ohms, negative sync
R-Y/B-Y: 0.7 Vp-p, 75 ohms
R.G.B. analog input : BNC x 6 (3 with bridged output)
R/G/B: 0.7 Vp-p, 75 ohms
Sync on green 1 Vp-p, 75 ohms,
negative
R.G.B. TTL input : 9-pin D-sub connector x 1
Sync input : BNC x 2 (1 with bridged output)
1 – 4 Vp-p, 75 ohms, negative;
(VBS) 1 Vp-p, 75 ohms, negative sync
Termination switch provided

External control connector
(REMOTE/TALLY) : 7-pin connector x 1
High Voltage : 26.6 kV ±1 kV (at zero beam current)
Tube : 1
Transistor : 196
IC : 38

Dimensions
(Unit: mm)



Weight : 33.3 kg
Accessory : Power cord
(approx. 2 m) x 1

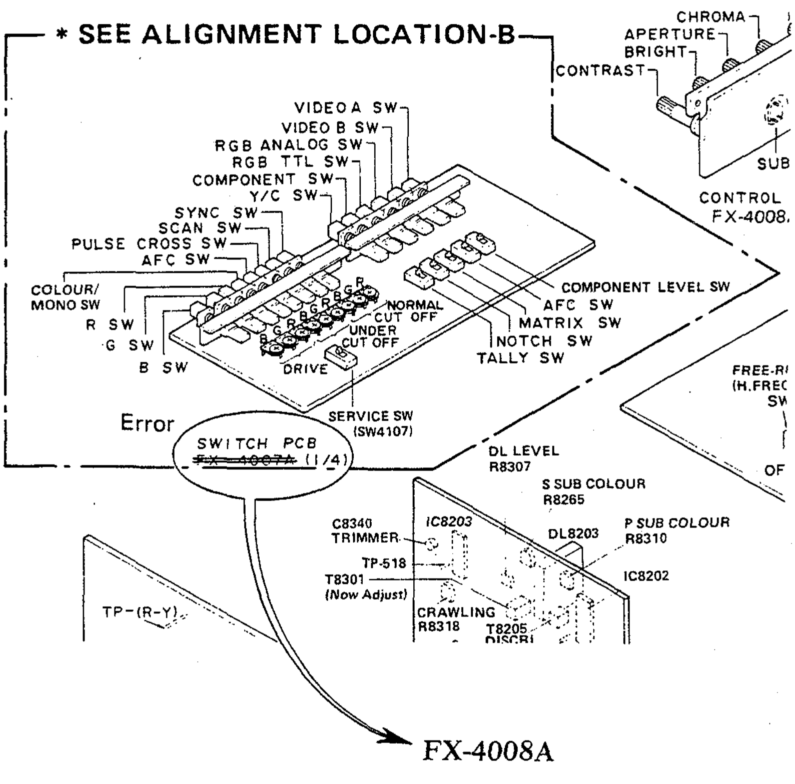
Design and specifications subject to change without notice.

Correction of Service Manual

Error has been discovered in the Service Manual for VM-R200PSN.
Please effect the following correction.

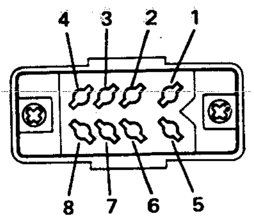
- The error is in the ALIGNMENT LOCATION, so please correct the ones in page 10 of the Service Manual and page ① of the appended Schematic Diagram as follows.

FX-4007A Correction ⇨ FX-4008A


* SEE ALIGNMENT LOCATION-B
CHROMA
APERTURE
BRIGHT
CONTRAST
SUB
CONTROL
FX-4008.
VIDEO A SW
VIDEO B SW
RGB ANALOG SW
RGB TTL SW
COMPONENT SW
Y/C SW
SYNC SW
SCAN SW
PULSE CROSS SW
AFC SW
COLOUR/ MONO SW
R SW
G SW
B SW
R
G
B
NORMAL CUT OFF
UNDER CUT OFF
DRIVE
COMPONENT LEVEL SW
AFC SW
MATRIX SW
NOTCH SW
TALLY SW
SERVICE SW (SW4107)
Error
SWITCH PCB
~~FX-4007A~~ (1/4)
FX-4008A
FREE-R
(H.FREC
SW
OF
DL LEVEL R8307
S SUB COLOUR R8265
C8340 TRIMMER
IC8203
DL8203
P SUB COLOUR R8310
TP-518
IC8202
T8301 (Now Adjust)
CRAWLING R8318
T8205
DISCRI
TP-(R-Y)

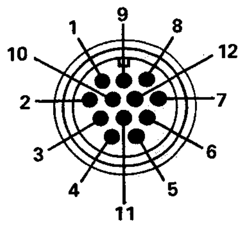
■ PIN ASSIGNMENT

VTR connector
(Input)



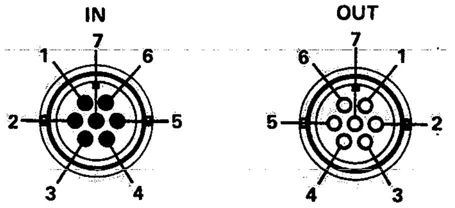
Pin No.	Signal
1	—
2	Composite video
3	—
4	—
5	—
6	GND
7	—
8	—

MII·BETACAM connectors
(Input)



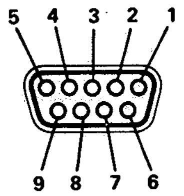
Pin No.	Signal
1	Y
2	GND (Y)
3	R-Y
4	GND (R-Y)
5	B-Y
6	GND (B-Y)
7	—
8	—
9	—
10	—
11	—
12	—

Y/C connectors



Pin No.	Signal
1	Y
2	GND (Y)
3	—
4	—
5	C
6	GND (C)
7	—

TTL connectors
(Input)



Pin No.	Signal
1	GND
2	GND
3	R
4	G
5	B
6	INTENSITY
7	GND
8	±H SYNC
9	±V SYNC

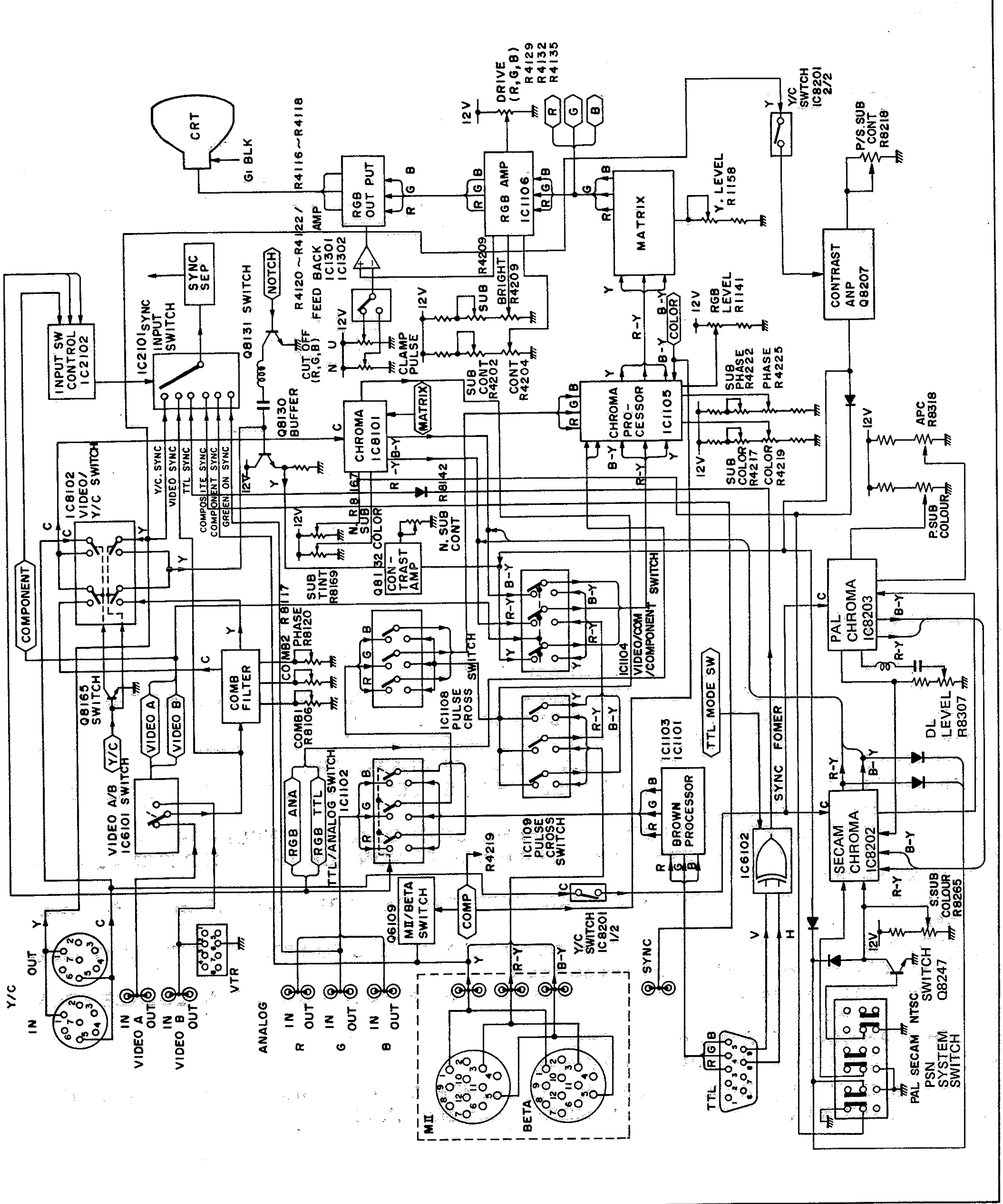
■ FEATURES

- PROVIDED WITH MII FORMAT AND BETACAM TERMINALS.
- PROVIDED WITH Y/C SEPARATE VIDEO SIGNAL INPUT TERMINAL WHICH ALLOWS THE VIDEO REPRODUCED BY S-VHS FORMAT VTR TO BE DISPLAYED CLEARLY.
- PROVIDED WITH THE TTL (RGB) 9-PIN D-SUB CONNECTOR INPUT TERMINAL, THUS ALLOWING IT TO BE USED AS A DISPLAY FOR IBM PERSONAL COMPUTERS.
- MEDIUM-RESOLUTION CATHODE-RAY TUBE (CRT) IS USED TO ALLOW FINE PICTURE TO BE REPRODUCED TRUTHFULLY.
- NOTCH CIRCUIT FOR REDUCING DOT INTERFERENCE OF SCREEN IS INCORPORATED.
- PROVIDED WITH EXTERNAL SYNC INPUT TERMINAL TO MONITOR THE VIDEO SIGNAL WITHOUT SYNC SIGNAL.
- PROVIDED WITH DISK SWITCH WHICH CAN MEET THE REQUIREMENTS OF BOTH PAL AND SECAM VIDEO DISKS.
- PROVIDED WITH A COMB FILTER WHICH NORMALLY IS USED FOR STATE-OF-THE-ART MONITOR TO OBTAIN A HIGH-RESOLUTION SCREEN.
- PROVIDED WITH A METAL CABINET WHICH IS LESS AFFECTED BY THE INFLUENCE FROM OTHER EQUIPMENT.
- UNDER-SCAN CIRCUIT IS INCORPORATED.
- PROVIDED WITH REMOTE/TARRY TERMINAL.
- 20-INCH MEDIUM-HIGH-RESOLUTION CRT, TOGETHER WITH A COMB FILTER FOR PICTURES WITH A HORIZONTAL RESOLUTION OF MORE THAN 600 LINES.

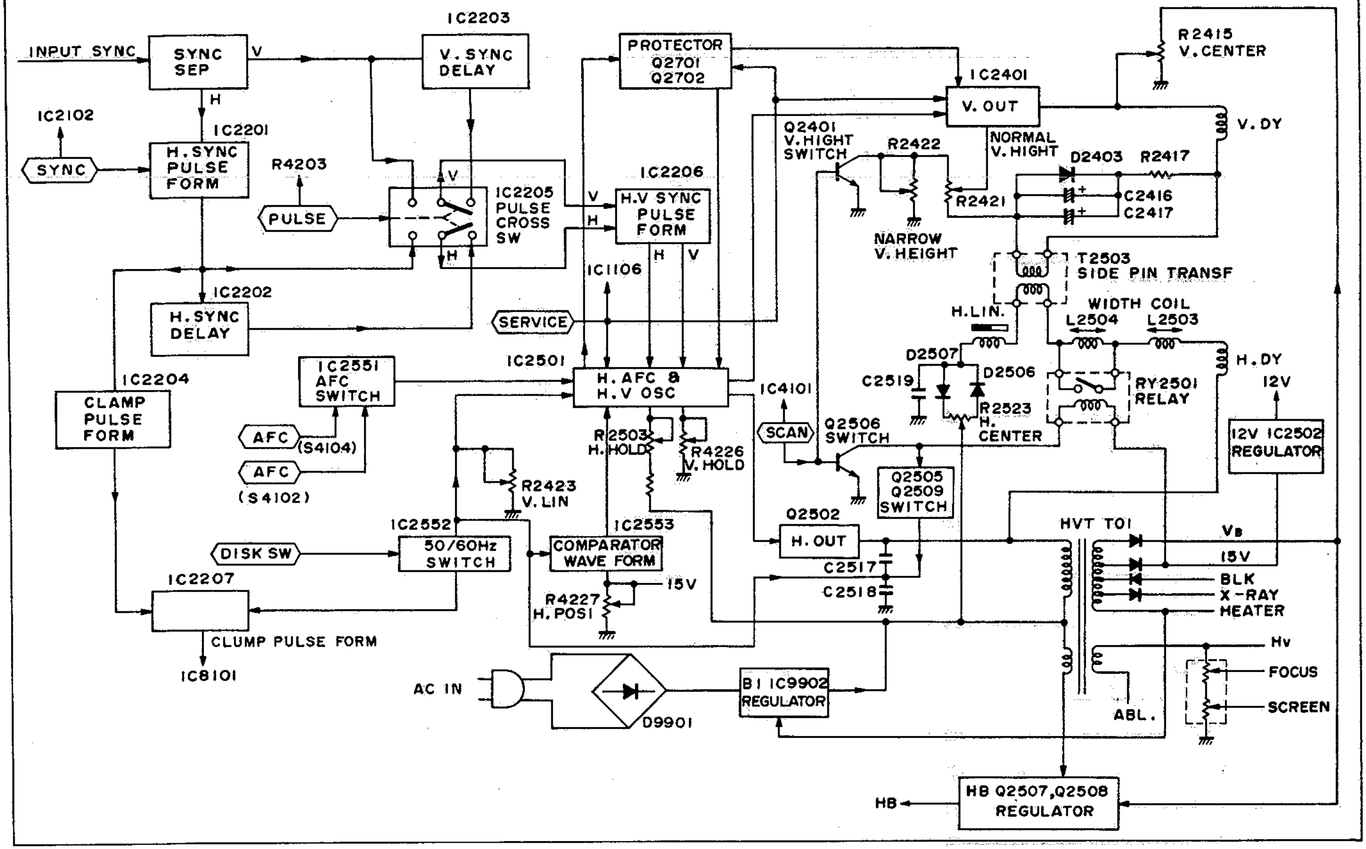
OUTLINE

- THIS IS A 20-INCH COLOR VIDEO MONITOR WHICH MAY BE CONNECTED TO VARIOUS KINDS OF EQUIPMENT SUCH AS S-VHS, VHD, MII FORMAT, BETACAM, AND PERSONAL COMPUTERS (INCLUDING IBM PERSONAL COMPUTERS).

BLOCK DIAGRAM (SIGNAL LINE)


CRT
G1 BLK
RGB OUT PUT
R4116~R4118
R4120~R4122/ AMP
FEED BACK IC1301 IC1302
RGB AMP IC1106
DRIVE (R,G,B) R4129 R4132 R4135
12V
MATRIX
Y. LEVEL R1158
Y/C SWTCH IC8201 2/2
P/S.SUB CONT R8218
CONTRAST ANP Q8207
SYNC SEP
NOTCH
Q8131 SWITCH
CUT OFF (R,G,B)
CLAMP PULSE
SUB BRIGHT R4209
SUB CONT R4202
CONT R4204
INPUT SW CONTROL IC2102
IC2101 SYNC INPUT SWITCH
Y/C. SYNC
VIDEO SYNC
TTL SYNC
COMPOSITE SYNC
COMPONENT SYNC
GREEN ON SYNC
Q8130 BUFFER
CHROMA IC8101
CHROMA PRO-CESSOR IC1105
COLOR
RGB LEVEL R1141
SUB PHASE R4222
PHASE R4225
SUB COLOR R4217
COLOR R4219
APC R8318
P.SUB COLOUR
R8142
N. SUB TINT R8167
SUB COLOR
SUB TINT R8169
Q8132 CON-TRAST AMP
N. SUB CONT
IC8102 VIDEO/ Y/C SWITCH
COMPONENT
IC1104 VIDEO/COM /COMPONENT SWITCH
PAL CHROMA IC8203
DL LEVEL R8307
COMB FILTER
COMB2 PHASE R8117 R8120
COMB1 R8106
IC1108 PULSE CROSS SWITCH
TTL MODE SW
IC1103 IC1101
BROWN PROCESSOR
SYNC FOMER
SECAM CHROMA IC8202
Q8165 SWITCH
VIDEO A
VIDEO B
Y/C
VIDEO A/B IC6101 SWITCH
RGB ANA
RGB TTL
TTL/ANALOG SWITCH IC1102
IC1109 PULSE CROSS SWITCH
R4219
Q6109 MII/BETA SWITCH
COMP
Y/C SWITCH IC8201 1/2
IC6102
S.SUB COLOUR R8265
Q8247 SWITCH
PSN SYSTEM SWITCH
PAL SECAM NTSC
Y/C IN OUT
VIDEO A IN OUT
VIDEO B IN OUT
VTR
ANALOG R G B IN OUT
MII
BETA
SYNC
TTL
V
H

BLOCK DIAGRAM (SYNC/DEF LINE)


IC2203
INPUT SYNC
SYNC SEP
V
H
V. SYNC DELAY
PROTECTOR Q2701 Q2702
IC2401
V. OUT
R2415 V. CENTER
V. DY
IC2102
SYNC
IC2201
H. SYNC PULSE FORM
R4203
PULSE
IC2205 PULSE CROSS SW
IC2206
H.V SYNC PULSE FORM
Q2401 V. HIGHT SWITCH
R2422
NORMAL V. HIGHT
D2403
R2417
R2421
C2416
C2417
NARROW V. HEIGHT
T2503 SIDE PIN TRANSF
IC1106
IC2202
H. SYNC DELAY
SERVICE
H.LIN.
WIDTH COIL
L2504
L2503
IC2204
CLAMP PULSE FORM
IC2551 AFC SWITCH
IC2501
H. AFC & H.V OSC
D2507
D2506
C2519
H. DY
RY2501 RELAY
12V
IC4101
AFC
(S4104)
AFC
(S4102)
R2503 H. HOLD
R4226 V. HOLD
R2523 H. CENTER
SCAN
Q2506 SWITCH
12V IC2502 REGULATOR
R2423 V. LIN
Q2505 Q2509 SWITCH
IC2552
IC2553
Q2502
H. OUT
HVT T01
VB
DISK SW
50/60Hz SWITCH
COMPARATOR WAVE FORM
C2517
15V
15V
BLK
IC2207
R4227 H. POSI
C2518
X-RAY
HEATER
CLUMP PULSE FORM
Hv
IC8101
FOCUS
AC IN
B1 IC9902 REGULATOR
D9901
ABL.
SCREEN
HB
HB Q2507, Q2508 REGULATOR

■ TRUTH TABLE OF SWITCH IC

A large number of ICs are used in this monitor for each switch selection (SYNC, PULSE etc.). The following shows the switch-on conditions and on channels for your reference.

● TC4051BP, TC4053BP
(IC2101, IC2205)

CONTROL SIGNAL INPUT			ON-CHANNEL			
9PIN	10PIN	11PIN				
L	L	L	13PIN	12PIN	2PIN	5PIN
L	L	H	14 〃	13 〃	2 〃	5 〃
L	H	L	15 〃	12 〃	1 〃	5 〃
L	H	H	16 〃	13 〃	1 〃	5 〃
H	L	L	1 〃	12 〃	2 〃	3 〃
H	L	H	5 〃	13 〃	2 〃	3 〃
H	H	L	2 〃	12 〃	1 〃	3 〃
H	H	H	4 〃	13 〃	1 〃	3 〃
COMMON TERMINAL			3PIN	14PIN	15PIN	4PIN
IC			TC 4051BP	TC4053BP		

※ L : LOW VOLTAGE, H : HI. VOLTAGE

※ 8-12, 9-13, ...etc. ; 8PIN & 12PIN, 9PIN & 13PIN ON

● AN5860
(IC1102, IC1104, IC1109, IC4101)

CONTROL SIGNAL INPUT	ON-CHANNEL
7PIN	
H	$8_{PIN} - 12_{PIN}$, $9_{PIN} - 13_{PIN}$, $10_{PIN} - 14_{PIN}$
L	$8_{〃} - 4_{〃}$, $9_{〃} - 2_{〃}$, $10_{〃} - 2_{〃}$

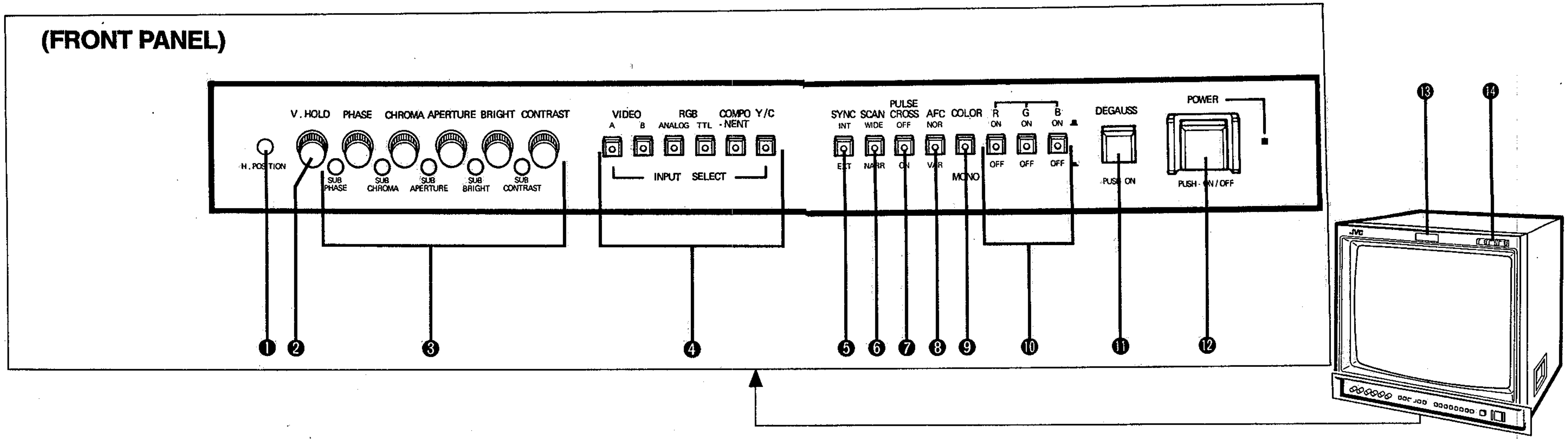
● LA7016
(IC6101)

CONTROL SIGNAL INPUT	ON-CHANNEL
3PIN	
H	4PIN - 2PIN
L	4PIN - 7PIN

● TC4066BP
(IC2551, IC8102)

CONTROL SIGNAL INPUT				ON-CHANNEL
5PIN	6PIN	12PIN	13PIN	
H	＼	＼	＼	4PIN - 3PIN
＼	H	＼	＼	8PIN - 9PIN
＼	＼	H	＼	10PIN - 11PIN
＼	＼	＼	H	1PIN - 2PIN

(FRONT PANEL)



❶ H. POSITION control screw
Turn to adjust the horizontal position of the picture. Use a screwdriver to turn it.

❷ V. HOLD control
Turn to adjust the vertical synchronization of the picture.

❸ Picture controls
Use to optimize the picture. The center click position of each control is its standard setting. This standard setting can be varied (preset) by setting the SUB control screws at the side of the controls. Use a screwdriver to turn the SUB controls.

- **PHASE control**
  Turn to adjust the picture hue. Adjust with reference to skin color.
- **CHROMA control**
  Turn to adjust the color density of the picture to your preference.
- **APERTURE control**
  Turn to adjust the contours to your preference.
- **BRIGHT control**
  Turn to adjust the picture brightness to your preference.
- **CONTRAST control**
  Turn to adjust the picture contrast to your preference.

❹ INPUT SELECT switches
Press the switch corresponding to the required input mode, for signals from the corresponding input connector on the rear panel.

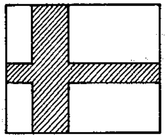
Switch setting	Corresponding input connector(s)
VIDEO A	VIDEO A connector
VIDEO B	VIDEO B or VTR*
RGB ANALOG	R/G/B
RGB TTL	TTL
COMPONENT	Y/R-Y/B-Y, MII or BETACAM**
Y/C	Y/C

*Connect to either connector as these connectors are internally connected in parallel.
**Connect to one of those connectors as they are internally connected in parallel.

❺ SYNC switch
Switches synchronization between internal and external. When set to the EXT position, input a sync signal to the SYNC connector on the rear panel.
INT (■): For internal sync
EXT (—): For external sync
Note: If switching is to be done using the REMOTE/TALLY connector, set to INT (■).

❻ SCAN switch
Switches between overscan and underscan.
WIDE (■): For overscan
NARR (—): For underscan
Note: If switching is to be done using the REMOTE/TALLY connector, set to WIDE (■).

❼ PULSE CROSS switch
To check the retrace period (sync signal) by delaying the phase of the input signal.
OFF (■): For normal picture
ON (—): For retrace period check display

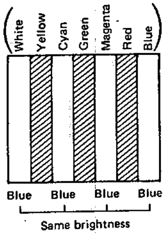


❽ AFC switch
Switches the AFC time constant of the horizontal sync circuitry to correct the skewed portion of the picture.
NOR (■): For normal (standard) condition
VAR (—): Fast or slow condition
Note: The "VAR" condition can be switched between "fast" (when shipped) and "slow". For details, consult your local dealer.

❾ COLOR/MONO switch
Switches picture between colour and monochrome for checking white balance, etc.
COLOR (■): For a colour picture
MONO (—): For a monochrome picture
Note: If switching is to be done using the REMOTE/TALLY connector, set to COLOR (■).

❿ R/G/B switches
To output or eliminate individual colours (R (red), G (green) and B (blue)) in the output, for checking each colour or for adjustment of hue or colour density.
ON (■): Colour on
OFF (—): Colour off

Hue/color density adjustment
(1) Input a colour bar signal.
(2) Turn the R and G colour outputs off. (Only B will be displayed.)
(3) Turn the PHASE and CHROMA controls so that all colour bars shown in the diagram have the same brightness.



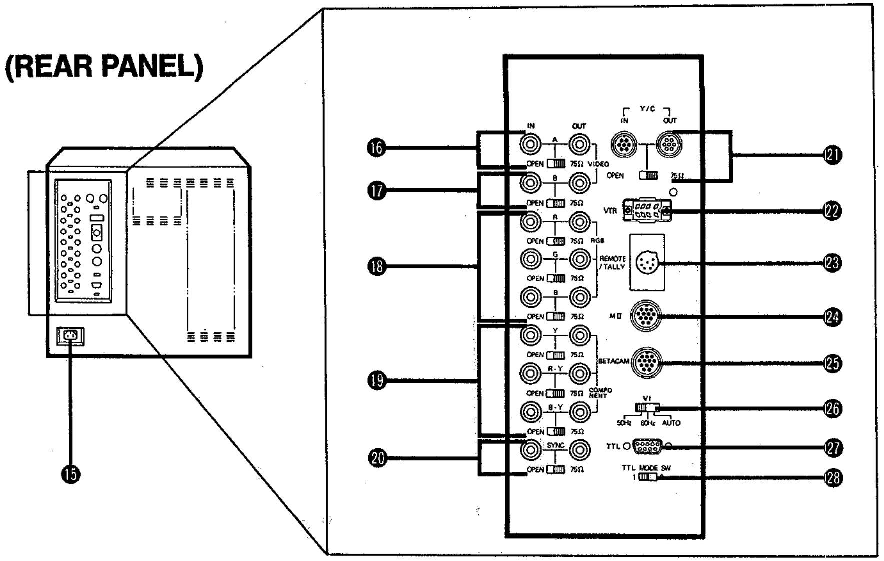
⓫ DEGAUSS switch
Press to demagnetize the CRT when colour patches are observed.
Degaussing
Keep this switch depressed for approx. 10 seconds. To use this switch a second time, wait more than 10 minutes.

⓬ POWER switch/indicator
Press to turn the power on. The indicator lights. Press again to turn the power off.

⓭ Tally lamp
Lights when a tally signal is input to the REMOTE/TALLY connector on the rear panel. (For operation, see ㉒ "REMOTE/TALLY connector" on page 7.)

⓮ Colour system select switch
Switches the colour system when a video signal is input.
PAL: For PAL colour system
SECAM: For SECAM colour system
NTSC: For NTSC colour system

(REAR PANEL)



⑮ Power input connector

Connect to an AC outlet with the provided power cord.

⑯ VIDEO A IN/OUT connectors/Termination switch

Input connector for composite video signal and bridge-connected signal output connector.

IN: When inputting a composite video signal
OUT: For bridged connection

Termination switch
75 Ω: When there is only an input signal
OPEN: For bridged connection

⑰ VIDEO B IN/OUT connectors/Termination switch

Input connector for composite video signal and bridge-connected signal output connector.

IN: When inputting a composite video signal
OUT: For bridged connection

Termination switch
75 Ω: When there is only an input signal
OPEN: For bridged connection

Note: This connector is internally connected in parallel with the VTR connector. Therefore, do not connect equipment to both connectors at the same time.

⑱ R/G/B IN/OUT connectors/Termination switches

Input connectors for R/G/B analog signals and bridge-connected signal output connectors.

IN: When inputting R, G and B analog signals
OUT: For bridged connection

Note: Set the SYNC switch as follows depending on the sync signal.

Sync signal	SYNC switch
Sync on green	INT (■)
No signal (Sync signal input to the SYNC connector)	EXT (▁)

Termination switch
75 Ω: When there are only input signals
OPEN: For bridged connection

⑲ Y/R-Y/B-Y IN/OUT connectors/Termination switches

Input connectors for component video signals and bridge-connected signal output connectors.

IN: When inputting Y/R-Y/B-Y component video signals
OUT: For bridged connection

Note: This connector is internally connected in paralle with the MII and BETACAM connectors. Therefore, do not connect equipment to those connectors at the same time.

Termination switch
75 Ω: When there are only input signals
OPEN: For bridged connection

⑳ SYNC IN/OUT connectors/Termination switch

Input connectors for sync (composite video) signal and bridge-connected signal output connector. Use when the video signal to be input does not contain a sync signal or in external genlock applications.

IN: When inputting a sync signal
OUT: For bridged connection

Termination switch
75 Ω: When there is only an input signal
OPEN: For bridged connection

㉑ Y/C IN/OUT connectors/Termination switch

Input connector for Y/C separate video signals (S-VHS format) and bridge-connected signal output connector.

IN: When inputting Y/C separate video signals
OUT: For bridged connection

Termination switch
75 Ω: When there are only input signals
OPEN: For bridged connection

㉒ VTR connector

Input connector for composite video signal from equipment that is provided with the same type of 8-pin VTR output connector.

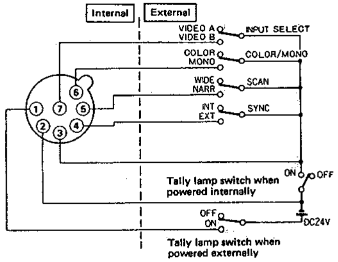
Notes:

- This connector is internally connected in parallel with the VIDEO B IN connector. Therefore, do not connect equipment to both connectors at the same time.
- Bridged output is not possible.

㉓ REMOTE/TALLY connector

For remote operation of the input switching between VIDEO A/B, the settings of the SYNC, SCAN, COLOR/MONO switches, and lighting of the tally lamp.

[Connection diagram]



Notes:

- For switching the tally lamp's power source between internal and external, consult your local dealer.
- When using this connector, the front-panel controls should be set as follows:

INPUT SELECT switch:	VIDEO A
SYNC switch:	INT (■)
SCAN switch:	WIDE (■)
COLOR/MONO switch:	COLOR (■)

㉔ MII connector

Input connector for MII format component video signals.

Note: This connector is internally connected in parallel with the Y/R-Y/B-Y and BETACAM connectors. Therefore, do not connect equipment to these connectors at the same time.

㉕ BETACAM connector

Input connector for BETACAM format component video signals.

Notes:

- This connector can be used only when the internal circuitry is switched to BETACAM. The circuitry is switched to MII when the monitor is shipped from the factory. To use this connector (BETACAM), consult your local dealer.
- This connector is internally connected in parallel with the Y/R-Y/B-Y and MII connectors. Therefore, do not connect equipment to these connectors at the same time.

㉖ Vf switch

Use to set the vertical scanning frequency. Normally, set to "AUTO" for automatic detection of 50 or 60 Hz. If signals are unstable, set to "50 Hz" or "60 Hz".

㉗ TTL connector

Input connector for RGB TTL signals. Connect a computer with a horizontal scanning frequency of 15.75 kHz.

Note: Set the TTL MODE switch depending on the computer connected. See "㉘ TTL MODE switch" below.

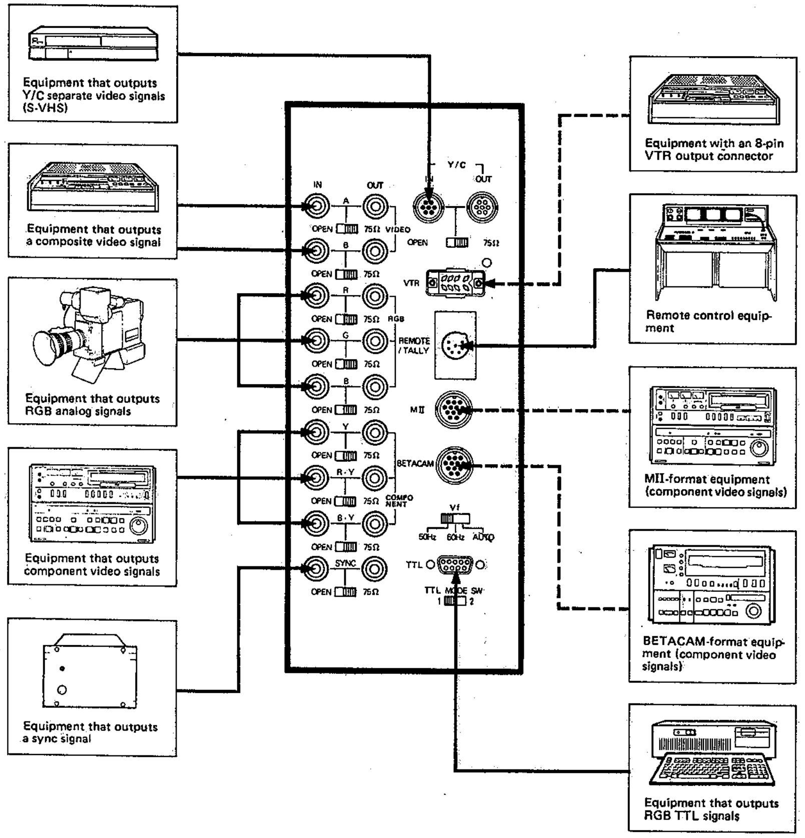
㉘ TTL MODE switch

Set according to the computer connected to the TTL connector.

1: When connected to an IBM (with CGA) or an IBM-compatible computer
2: When connected to a computer other than the above.

■ CONNECTIONS

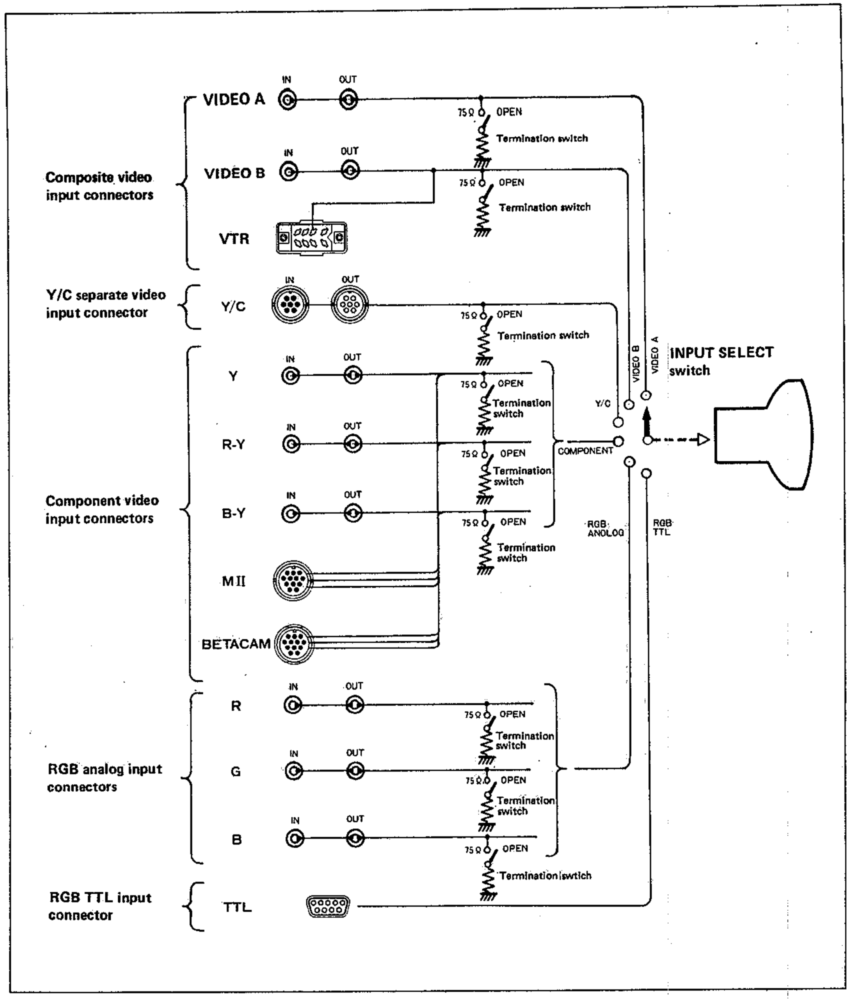
- Be sure to disconnect the power plug from the AC outlet before connecting to other equipment.
- Also refer to the instruction manual of the equipment to be connected.


Equipment that outputs Y/C separate video signals (S-VHS)
Equipment that outputs a composite video signal
Equipment that outputs RGB analog signals
Equipment that outputs component video signals
Equipment that outputs a sync signal
Equipment with an 8-pin VTR output connector
Remote control equipment
MII-format equipment (component video signals)
BETACAM-format equipment (component video signals)
Equipment that outputs RGB TTL signals
IN
OUT
A
B
VIDEO
OPEN
75Ω
Y/C
R
G
B
RGB
VTR
REMOTE /TALLY
MII
Y
R-Y
B-Y
BETACAM
COMPONENT
SYNC
Vf
50Hz
60Hz
AUTO
TTL
TTL MODE SW
1
2

- When using any of the OUT connectors (bridged output), set its termination switch to "OPEN".

■ CONNECTIONS OUTLINE DIAGRAM

The following is an outline of the circuitry and connections, showing concepts, it is not a circuit diagram.


Composite video input connectors
Y/C separate video input connector
Component video input connectors
RGB analog input connectors
RGB TTL input connector
VIDEO A
VIDEO B
VTR
Y/C
Y
R-Y
B-Y
MII
BETACAM
R
G
B
TTL
IN
OUT
75Ω
OPEN
Termination switch
VIDEO B
VIDEO A
Y/C
COMPONENT
RGB ANALOG
RGB TTL
INPUT SELECT switch

■ HOW TO REMOVE FOR SERVICE

■ REAR PANEL REMOVAL

Unscrew the twelve screws marked Ⓐ shown in Fig. A.

■ CONTROL P.C. BOARD REMOVAL

Unscrew the four screws marked Ⓐ shown in Fig. B, and withdraw the CONTROL P.C. BOARD forward.

■ INPUT P.C. BOARD, DECODE P.C. BOARD, & SIGNAL P.C. BOARD REMOVAL

Unscrew the two screws marked Ⓐ shown in Fig. C, and withdraw the INPUT/DECODE/SIGNAL P.C. BOARD backward.

■ DEF. P.C. BOARD REMOVAL

Unscrew the two screws marked Ⓑ shown in Fig. C, and withdraw the DEF P.C. BOARD backward.

■ LINE FILTER P.C. BOARD REMOVAL

Unscrew the two screws marked Ⓓ shown in Fig. C, and withdraw the LINE FILTER P.C. BOARD backward.

■ POWER P.C. BOARD REMOVAL

Unscrew the two screws marked Ⓒ shown in Fig. C, and withdraw the POWER P.C. BOARD backward.

■ WIRE CLAMPING AND TYING BAND

1. If necessary, take of the wire clamp and connectors, and be sure to clamp the wire after servicing.
2. Never remove the tying band used for wire clamping. Should it be removed, be sure to reclamp the wire in its original position.
   (Be sure to use insulating material.)

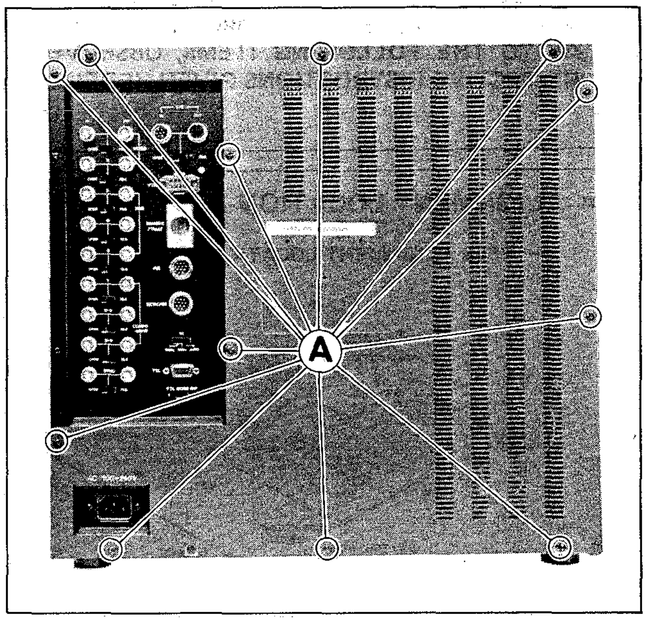


Fig. A

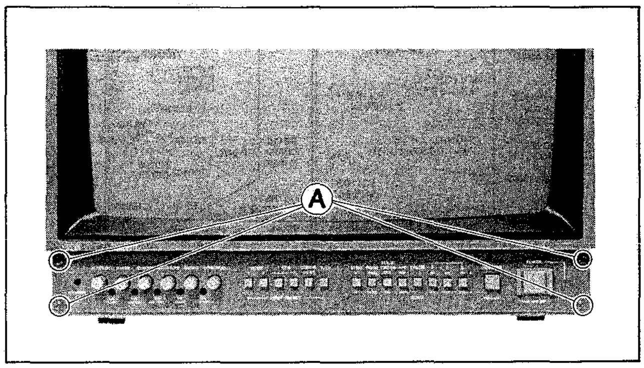


Fig. B

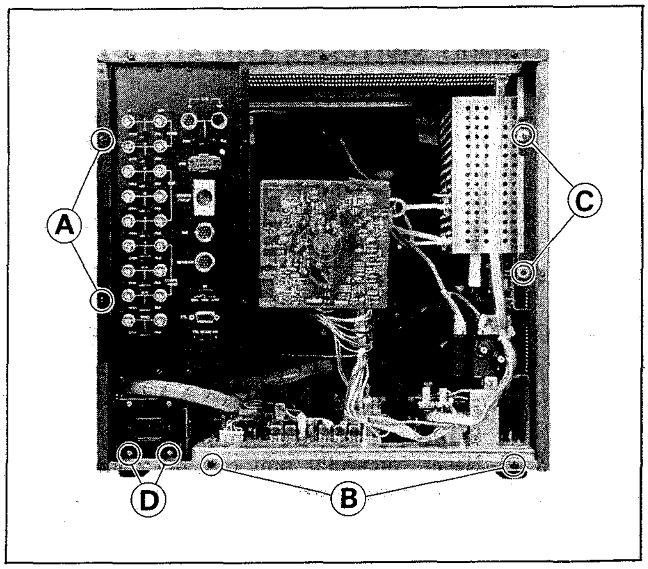
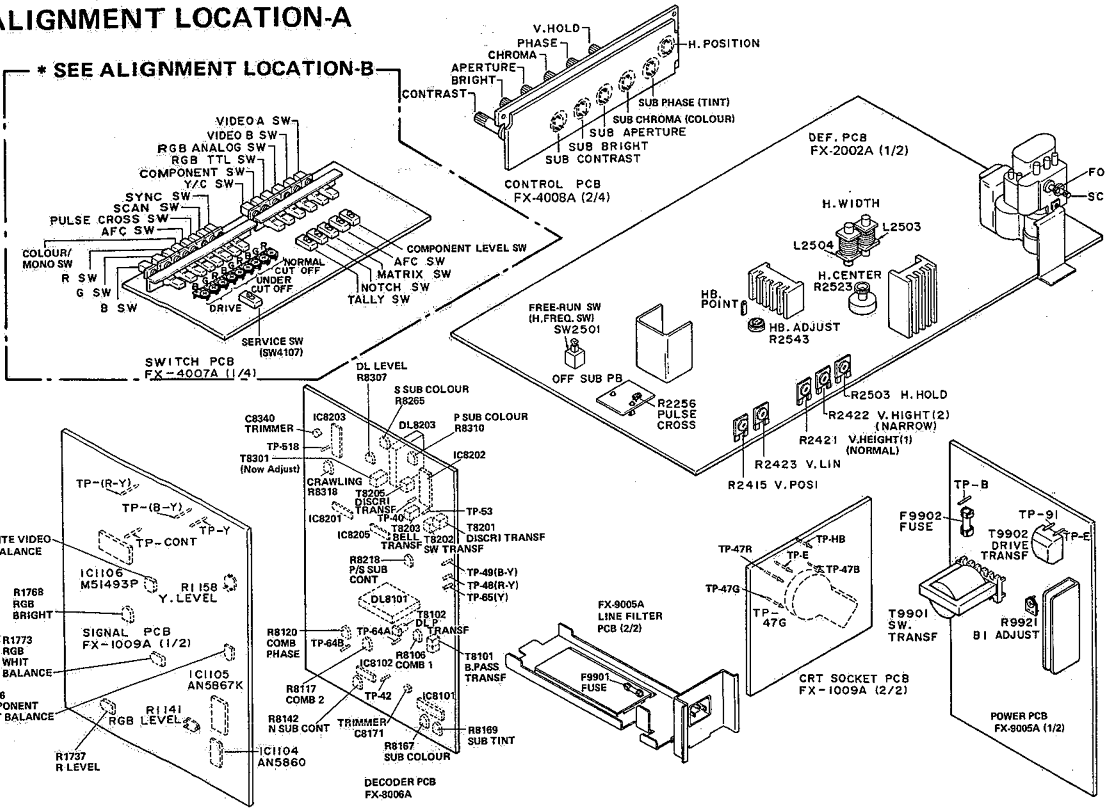


Fig. C

SERVICE ADJUSTMENTS

- AS FOR THE ADJUSTMENT OF PURITY, CONVERGENCE AND WHITE BALANCE, REFER TO THE APPENDED PAL/SECAM-C 870807 ADJUSTMENT.
- AS TO THE FOLLOWING ITEMS, OBSERVE THE RESPECTIVE INSTRUCTIONS GIVEN HEREIN.
- AS FOR THE TEST POINT (TP) AND RESPECTIVE ADJUSTING POSITION, REFER TO THE ALIGNMENT LOCATION ON THE SCHEMATIC DIAGRAM AND THE SERVICE ADJUSTMENT IN THE GIVEN HEREIN.
- SET THE USER CONTROL VRs TO CENTRAL POSITION.

■ ALIGNMENT LOCATION-A


* SEE ALIGNMENT LOCATION-B
V.HOLD
PHASE
CHROMA
APERTURE
BRIGHT
CONTRAST
H. POSITION
SUB PHASE (TINT)
SUB CHROMA (COLOUR)
SUB APERTURE
SUB BRIGHT
SUB CONTRAST
CONTROL PCB
FX-4008A (2/4)
VIDEO A SW
VIDEO B SW
RGB ANALOG SW
RGB TTL SW
COMPONENT SW
Y/C SW
SYNC SW
SCAN SW
PULSE CROSS SW
AFC SW
COLOUR/
MONO SW
R SW
G SW
B SW
R
G
B
NORMAL
CUT OFF
UNDER
CUT OFF
DRIVE
COMPONENT LEVEL SW
AFC SW
MATRIX SW
NOTCH SW
TALLY SW
SERVICE SW
(SW4107)
SWITCH PCB
FX-4007A (1/4)
DEF. PCB
FX-2002A (1/2)
FOCUS
SCREEN
H.WIDTH
L2503
L2504
H.CENTER
R2523
HB.
POINT
HB. ADJUST
R2543
FREE-RUN SW
(H.FREQ. SW)
SW2501
OFF SUB PB
R2256
PULSE
CROSS
R2503 H.HOLD
R2422 V.HIGHT(2)
(NARROW)
R2421 V.HEIGHT(1)
(NORMAL)
R2423 V.LIN
R2415 V.POSI
DL LEVEL
R8307
S SUB COLOUR
R8265
C8340
TRIMMER
IC8203
DL8203
P SUB COLOUR
R8310
TP-518
T8301
(Now Adjust)
IC8202
CRAWLING
R8318
T8205
DISCRI
TRANSF
IC8201
TP-40
TP-53
T8203
BELL
TRANSF
IC8205
T8202
SW TRANSF
T8201
DISCRI TRANSF
R8218
P/S SUB
CONT
TP-49(B-Y)
TP-48(R-Y)
TP-65(Y)
DL8101
T8102
DL P
TRANSF
R8120
COMB
PHASE
TP-64A
TP-64B
R8106
COMB 1
IC8102
T8101
B.PASS
TRANSF
R8117
COMB 2
TP-42
IC8101
R8142
N SUB CONT
TRIMMER
C8171
R8169
SUB TINT
R8167
SUB COLOUR
DECODER PCB
FX-8006A
TP-(R-Y)
TP-(B-Y)
TP-Y
TP-CONT
R1778
COMPOSITE VIDEO
WHITE BALANCE
IC1106
M51493P
R1158
Y.LEVEL
R1768
RGB
BRIGHT
SIGNAL PCB
FX-1009A (1/2)
R1773
RGB
WHIT
BALANCE
IC1105
AN5867K
R1776
CONPONENT
WHIT BALANCE
R1141
RGB LEVEL
R1737
R LEVEL
IC1104
AN5860
FX-9005A
LINE FILTER
PCB (2/2)
F9901
FUSE
TP-HB
TP-47R
TP-E
TP-47B
TP-47G
TP-
47G
CRT SOCKET PCB
FX-1009A (2/2)
TP-B
F9902
FUSE
TP-91
T9902
DRIVE
TRANSF
TP-E
T9901
SW.
TRANSF
R9921
B1 ADJUST
POWER PCB
FX-9005A (1/2)

■ ALIGNMENT LOCATION-B

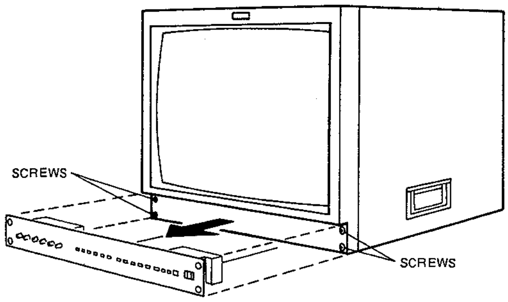
INTERNAL SWITCHES AND ADJUSTING PARTS

Switches and adjusting parts are located inside the front control panel.
Do not operate these switches nor do any adjustment when not needed.

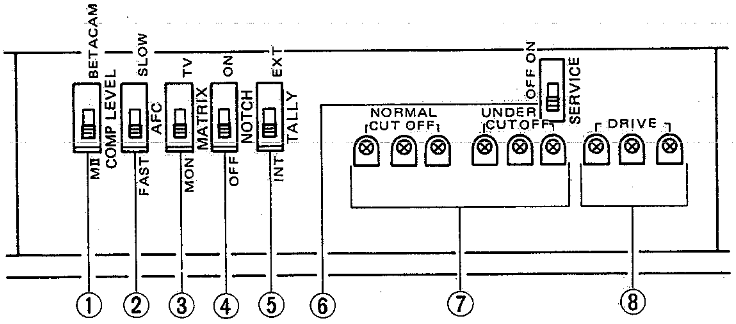
NOTE:
Adjustment of parts inside the control panel should only be done by servicemen since it is dangerous.

■ HOW TO PULL OUT CONTROL PANEL

(1) Remove four screws.
(2) Slowly pull out the control panel.
(3) Never forcefully pull out the control panel since it stops at the position where you can see the switches.


SCREWS
SCREWS

■ HOW TO USE INTERNAL SWITCHES AND ADJUSTING PARTS



①COMPONENT LEVEL SWITCH

This switch is used to switch the MⅡ terminal and BETACAM terminal.

MⅡ side : Input MⅡ terminal signal (on shipment)
BETACAM side : Input BETACAM terminal signal

②AFC SWITCH

This is used to switch the time constant when the AFC switch on the front control panel is set to VAR (▬).

FAST side : Fast (on shipment)
SLOW side : Slow

③MATRIX SWITCH

This switch is used to switch the demodulation angle of color when the composite signal is input. Normally set this to the MON position.

MON position : demodulation angle is 90 degrees (upon shipment)
TV position : demodulation angle is 105 degrees

④NOTCH SWITCH

This switch is used to reduce dot interference of the brightness boundary when the composite signal is input.

OFF position : Notch circuit is turned off (on shipment)
ON position : Dot interference is reduced. However, resolution is slightly reduced.

⑤TALLY SWITCH

This switch is used to determine whether the TALLY lamp is lit by the internal power supply or by an external power supply.

INT position : Internal power supply (upon shipment)
EXT position : External power supply

⑥SERVICE SWITCH

This switch is used to output the"A HOR LINE" when adjusting the WHITE BALANCE (CUT OFF).

OFF : Normal status (upon shipment)
ON : "A HOR LINE" is output

* Set the BRIGHT knob at the front to the center position.

⑦CUT OFF ADJUSTMENT KNOB

This is the white balance adjustment knob for the low-brightness part. Two sets of knobs are used depending on the status of the SCAN switch at the front.

NORMAL position: WIDE (during overscan)
UNDER position : NARR (during underscan)

⑧DRIVE ADJUSTMENT KNOB

This is the white balance adjustment knob for the high-brightness part.

■ ADJUSTMENT OF B1 AND HB VOLTAGES

1. Input all-black signal.
2. Adjust the B1 adjustment VR (R9921) so that the DC voltage between TP-91 and TP-E reads 110V.
3. Adjust the HB adjustment VR (R2543) so that the TP-HB and TP-E ($\perp$) at the CRT socket PCB may read 160V.

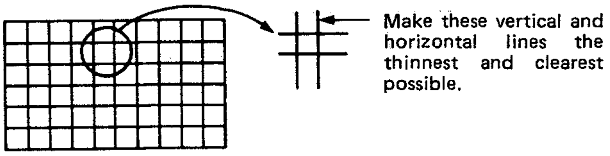
- Use a high-precision tester (internal resistance 20kΩ/V) for adjustment.

■ ADJUSTMENT OF HORIZONTAL SYNC

1. Press the Free-run switch (SW2501) to the cutoff position of sync. signal.
2. Adjust the H. HOLD VR (R2503) so that the picture almost stops moving left and right and then repress the Free-run switch to its original position.

■ FOCUS ADJUSTMENT

1. Finish setting HB and B1 voltages beforehand.
2. Input the cross hatch pattern.
3. Rotate the FOCUS VR (upper knob of high-voltage resistor module), monitoring the screen and set it where the vertical and horizontal lines of cross hatch pattern are the thinnest and most clear while adjusting the Focus knob.

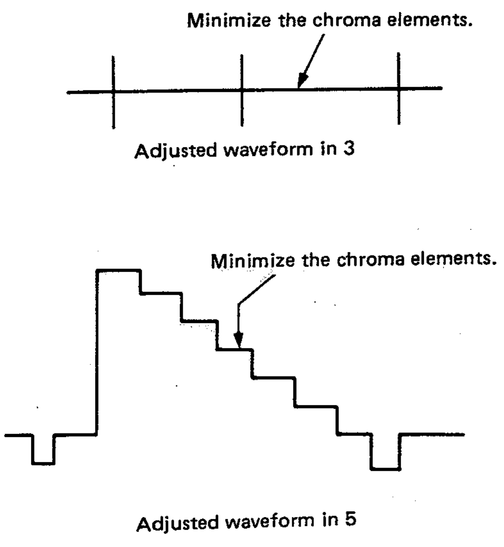

Make these vertical and horizontal lines the thinnest and clearest possible.

NOTE: Always perform the main adjustment (final adjustment) of convergence after the focus adjustment. Note that the convergence changes when the focus is adjusted.

■ COMB FILTER (NTSC) CIRCUIT ADJUSTMENT

1. Input colour bar pattern to the Video A or B terminal.
2. Connect an oscilloscope between TP-64A and GND at the decoder printed-circuit board.
3. Alternately adjust R8106 and T8102 so that the chroma elements may be minimized.
4. Connect the oscilloscope between TP-64B and GND at the decoder printed-circuit board.
5. Alternately adjust R8117 and R8120 so that the chroma elements may be minimized.

- TP-64B = ⑪ pin of IC8102
- TP-64A = Collector of Q8103
- R8106 = COMB1 adj. VR
- R8117 = COMB2 adj. VR
- R8120 = COMB PHASE adj. VR
- T8102 = DL PHASE Transformer


Minimize the chroma elements.
Adjusted waveform in 3
Minimize the chroma elements.
Adjusted waveform in 5

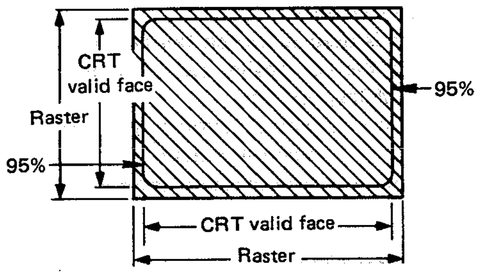
■ COLOUR SYNC ADJUSTMENT (NTSC)

1. Input colour bar pattern to the VIDEO A or B terminal.
2. Connect pin ⑧ of IC8101 to 12V line with a resistor (10kΩ) and then pin ⑫ of IC8101 to GND with a capacitor (0.22μF).
3. Adjust the trimmer capacitor (C8171: colour sync.) so that colour changes from streaking to colour bar.
4. Remove the resistor and capacitor.
5. Change the input signal to the colour bar signal and check to see if the colour sync may be absorbed instantly.

■ ADJUSTMENT OF HORIZONTAL AMPLITUDE AND HORIZONTAL CENTER

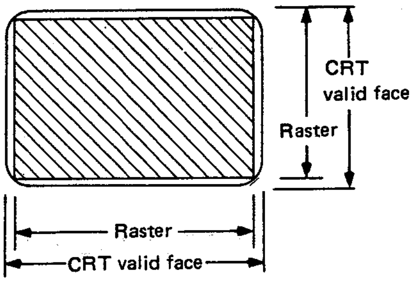
* Set the Contrast and Bright VR to the central positions.
* Finish the B_1 adj., H. hold and Purity, Convergence adjustments beforehand.

1. Input the cross hatch pattern (or monoscope pattern).
2. Set the scan switch on the front control panel to the Wide side and make an adjustment so that the raster at the CRT valid face may be 95% with the H. WIDTH coil (L2503) as shown in Fig. 1.
3. Make an adjustment so that the raster edge is in contact with the CRT corner as shown in Fig. 2 using the H. Width coil (L2504) when the Scan switch is set to the "NARROW" position.


CRT
valid face
Raster
95%
95%
CRT valid face
Raster

(On "WIDE")

Fig. 1


CRT
valid face
Raster
Raster
CRT valid face

(On "NARROW")

Fig. 2

5. Horizontal center adjustment (On "NARROW")
Align the center of the screen with the center of the raster using the H. Position VR (R4227) located at the front face. Then, align the center of screen to that of CRT using the H. Center VR (R2523).

■ ADJUSTMENT OF VERTICAL AMPLITUDE, VERTICAL CENTER, AND VERTICAL LINEARITY

* Set the contrast and bright VR to the central position.

1. Input the cross-hatch pattern (or monoscope pattern).
2. Roughly make an adjustment so that the upper and lower patterns are in contact using the V. Height (1) VR (R2421) when the scan switch is set to the "WIDE" position.
3. Make an adjustment so that the upper and lower edges of may be at 95% of the screen using the V. Height (1) (R2421) and V. Posi. VR (R2415).
4. Rotate the V. Lin VR (R2423) to adjust the upper and lower linearity.
5. Adjust the raster so that its edge is in contact with the CRT corner using the V. Height (2) VR (R2422) when the Scan switch is set to the "NARROW" position. (R2421: When WIDE adj./R2422: When NARROW adj.)

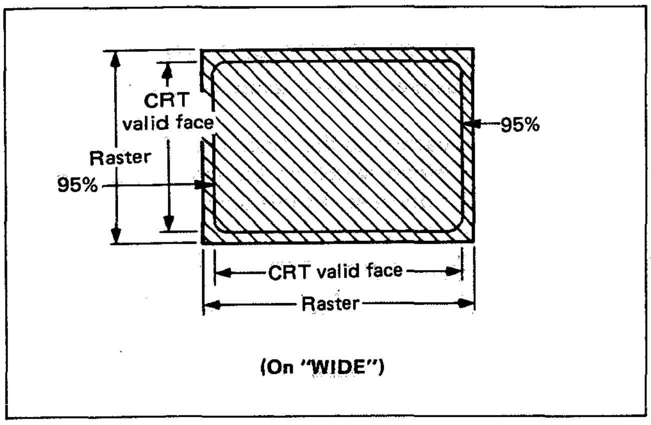


Fig. 1

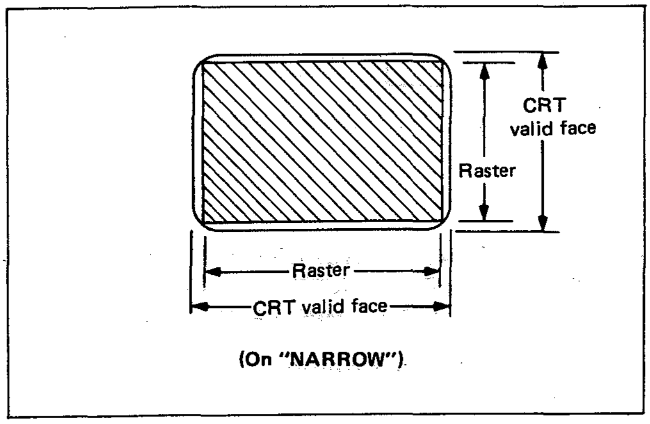


Fig. 2

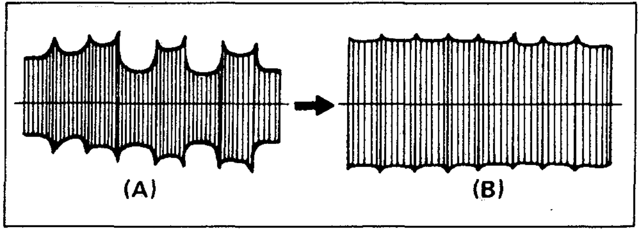
■ ADJUSTMENT OF CUTOFF

1. Set the Bright VR to the central position.
2. Make the colour sync adjustment.
3. Input all-black signal to the Video A or B terminal.
4. Set the Scan switch to the "WIDE" position on the front control panel.
5. Pull out the front control panel and make the screen to be "A HOR. LINE" using the Service switch (S4107) within the front control printed-circuit board.
6. Connect an oscilloscope between the TP-47B and TP-E (GND) terminals within the CRT socket printed-circuit board.
7. Make an adjustment so that the oscilloscope indicates 120V using the Normal B Cut Off VR (R4122) within the front control printed-circuit board.
8. Adjust the screen VR to obtain a proper brightness.
9. Perform the cutoff adjustment by adjusting the Normal R.G Cut Off VR.
10. Finely adjust the R.G Cut Off VR to match the white. At this time, do not use the Normal B Cut Off VR (R4122).
11. Set the SCAN switch of the front control panel to the "NARROW" position.
12. Perform the adjustments in the same manner as steps 4 to 10 above using each Under Cut Off VR (R4118, R4117, and R4116).
13. Cancel the "A HOR. LINE" using the Service switch.

■ SECAM CIRCUIT ADJUSTMENT

* The adjustment of the NTSC CIRCUIT should be completed.

1. Input the SECAM COLOUR BAR PATTERN (composite) to video terminal A or B.
2. Set the system switch to the SECAM position.
3. Connect an oscilloscope between the TP-40 (Pin ⑭ of IC8202) and GND in the decoder printed-circuit board.
4. Adjust the T8203 (bell transformer) so that all waveforms become flat.
5. Then, connect an oscilloscope between the TP-53 (Pin ⑩ of IC8202) and GND in the decoder printed-circuit board.
6. Adjust the T8202 (CW transformer) so that the DC voltage is set to the minimum value.
7. Alternately adjust the T8201 (DISCRI transformer) and T8205 (DISCRI transformer) so that the half colour bar (or white colour bar) becomes white.
8. By watching the picture, turn the CRAWLING adjustment VR (R8318) so that the picture will be adjusted to the best condition.



■ PAL CIRCUIT ADJUSTMENT

* The adjustment of the NTSC/SECAM CIRCUIT should be completed.

1. Input the PAL COLOUR BAR PATTERN (composite) to video terminal A or B.
2. Set the system switch to the PAL position.
3. Connect an oscilloscope to the ⑫ pin of IC8203. (Voltage range is AC10 mV).
4. Adjust the TRIMMER (C8340) so that a, b becomes the same level as shown in Fig. 1.

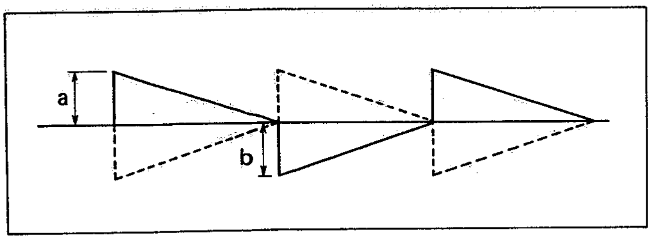


Fig. 1

5. Connect an oscilloscope to pins ⑳ and ㉒ of IC8203 to display resurge waveform.
6. Adjust the DL LEVEL VR (R8307) so that the resurge waveform may change from (A) to (B) to (C) in Fig. 2.
7. When the input signal is changed again to the colour bar, make sure that it retracts instantly without interrupting the colour synchronism.

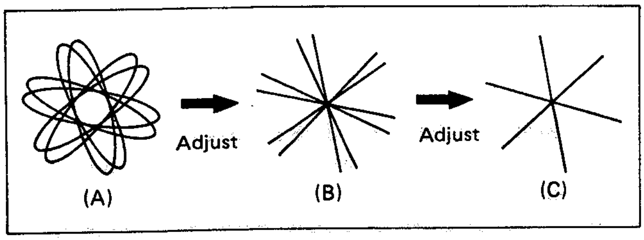
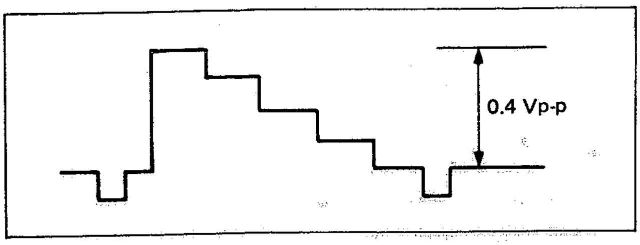


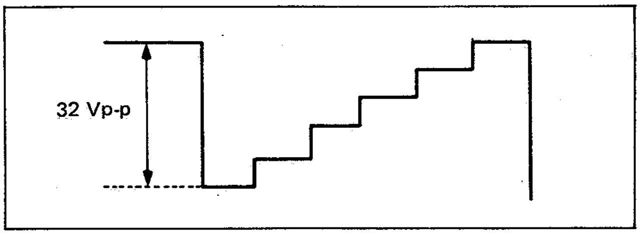
Fig. 2

■ ADJUSTMENT OF CONTRAST (I)

1. Set the Component switch to the "ON" position.
2. Finish the adjustment of decoder printed-circuit board beforehand.
3. Check to see if each manual VR is at the central position. Set it to the central position if it has not been set.
4. Input the component signal (color bar pattern),
5. Adjust the Y. LEVEL VR (R1158) so that the voltage is equal to 0.4 Vp-p at the TP-Y within the signal printed-circuit board.

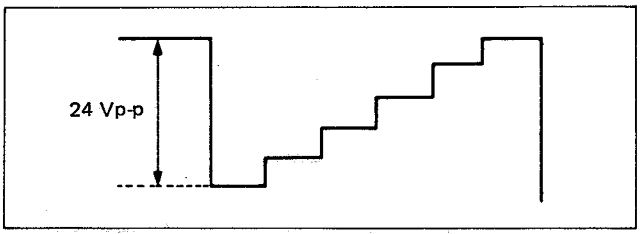


6. Connect a digital voltmeter to the TP-CONT at the signal printed-circuit board and make an adjustment so that the voltage is equal to 4.5V using the Sub Contrast VR (R4202) on the front control panel.
7. Set the Colour/Mono switch on the front control panel to the "MONO" position. At this time, confirm that the screen is in the gray scale.
8. Connect an oscilloscope between TP-47B and TP-E (GND) within the CRT socket printed-circuit board.
9. Pull out the front control panel and make an adjustment so that the oscilloscope indicates 32 Vp-p using the B Drive VR (R4135) on the front control printed-circuit board.



■ ADJUSTMENT OF CONTRAST (II)

1. Finish the adjustment using component signal beforehand.
2. Input color bar pattern to the Video A or B terminal.
3. Set the Colour/Mono switch on the front control panel to the "MONO" position. At this time, confirm that the screen is in gray scale.
4. Connect an oscilloscope between TP-47B and TP-E (GND) at the CRT socket printed-circuit board.
5. Make an adjustment so that the oscillator indicates 24 Vp-p using the N Sub Contrast VR (R8142) on the decoder printed-circuit board.



■ USE THIS AS A REFERENCE WHEN ADJUSTING THE CONTRAST AND COLOUR BY MEANS OF A COMPONENT SIGNAL

1. COMPONENT OUTPUT DEVICE

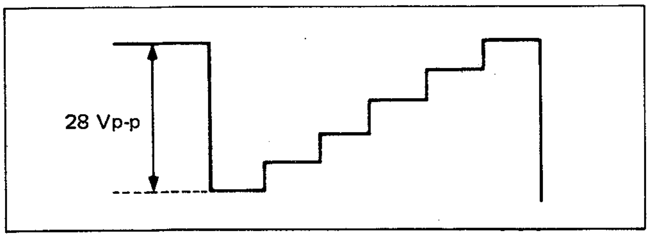
- MII format VTR
  KR-M800U, KR-M860U, KR-M460U, KR-M260U.
- BETACAM VTR
- Component output of IWS (Image Workstation)

2. INPUT LEVEL

R-Y, B-Y = 0.7 Vp-p
Y = 1 Vp-p (including sync 0.286 Vp-p)

■ ADJUSTMENT OF CONTRAST (III)

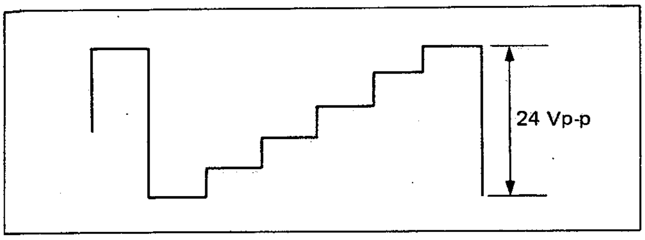
1. Finish the adjustment of component and composite video beforehand.
2. Input analog RGB signal (colour bar pattern).
3. At this time, set the Sync switch to the "INT" position if the sync signal is the Green On Sync input. And if the Sync signal is fed externally, input it through the Sync terminal and set the Sync switch to the "EXT" position.
4. Set the Colour/Mono switch on the front control panel to the "MONO" position.
5. Connect an oscilloscope between TP-47B and TP-E (GND) at the CRT socket printed-circuit board.
6. Make an adjustment so that the oscillator indicates 28 Vp-p using the RGB Level VR (R1141) on the signal printed-circuit board.



■ ADJUSTMENT OF CONTRAST (IV)

* The adjustment of the contrast (NTSC) should be completed.

1. Input the PAL COLOUR BAR PATTERN (composite) to video terminal A or B.
2. Set the system switch to the PAL position.
3. Set the COLOUR/MONO SW on the front control panel to the "MONO" position. At this time, confirm if the screen is in grey scale.
4. Connect an oscilloscope between the TP-47B and TP-E (GND) within the CRT SOCKET P.C.B.
5. Adjust the P/S SUB CONT. VR (R8218) within the DECODER P.C.B. so that the voltage becomes 24 Vp-p.



■ ADJUSTMENT OF WHITE BALANCE

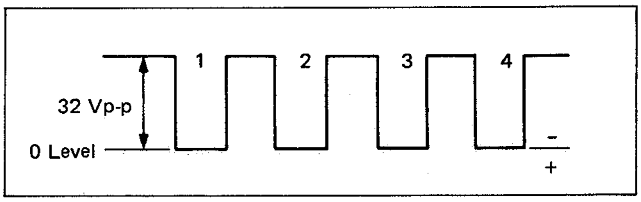
1. Warm up before adjustment (30 minutes or more).
2. Finish the cutoff adjustment beforehand.
3. Finish the contact and colour adjustment beforehand.
4. Input monoscope pattern signal to the Video A or B terminal.
5. Make an adjustment so that the entire screen becomes white using the R. (R4129)/G. (R4132) VR within the front control printed-circuit board. (At this time, do not adjust the B Drive VR (R4135)).

(Reference)

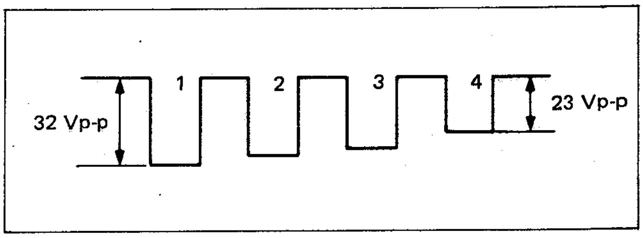
COLOUR TEMPERATURE
D6500°K X=0.313 Y=0.329

■ ADJUSTMENT OF COLOUR (I)

1. Finish the contrast adjustment beforehand.
2. Input component signal (colour pattern).
3. Set the Colour/Mono switch on the front control panel to the "COLOUR" position.
4. Pull out the front control panel and set the Comp Level switch on the front control printed-circuit board to the "MII" position.
5. Connect an oscilloscope between the TP-47B and TP-E (GND) at the CRT socket printed-circuit board.
6. Alternately adjust the Sub CHROMA VR (R4217) and Sub PHASE VR (R4222) within the front control printed circuit board and perform setting as shown below.
7. Let the waveform value of signal 1 be at level 0. Then, let the lower and upper sides be (+) and (-), respectively.
8. Make an adjustment so that 1, 2, 3, and 4 below are aligned.

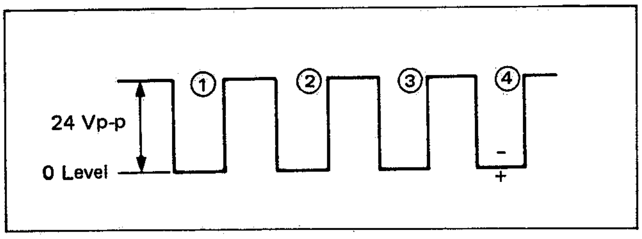


9. Confirm the contrast level. If the contrast shifts, adjust the contrast (Contrast adjustment(1)).
10. Push the R, G, SW on the front panel off, and set the Comp Level switch to the "BETA CAM" position. Adjust the level at number 4 to be 23 Vp-p using the Comp Level VR (R4230) as shown below.
11. Set the Comp Level switch to the "MII" position.



■ ADJUSTMENT OF COLOUR (II)

1. Finish the colour adjustment of component signal beforehand.
2. Finish the contrast adjustment beforehand.
3. Input colour bar pattern to the Video A or B terminal.
4. Set the Colour/Mono Switch on the front control panel to the "COLOUR" position.
   (At this time, confirm that the screen shows the color bar.)
5. Set the Matrix switch (S4105) on the front control printed-circuit board to the "MONO" position.
6. Connect an oscilloscope between TP-47B and TP-E (GND) at the CRT socket printed-circuit board.
7. Alternately adjust the N. Sub Colour VR (R8167) and Sub Tint VR (R8169) on the decoder printed-circuit board as shown in the following figure.
8. Let the waveform value of signal ① be at level 0. Then, let the lower and upper sides be (+) and (-), respectively.
   Make an adjustment so that ①, ②, ③, and ④ below are aligned.

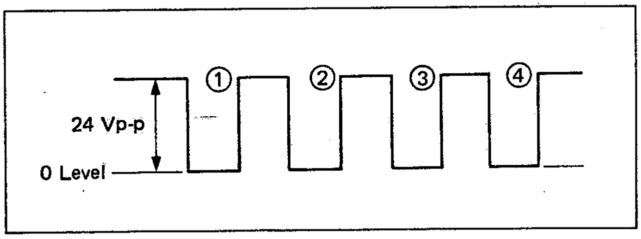


9. Confirm the contrast level. If the contrast shifts, adjust the contrast again (Contrast adjustment (II)).

■ COLOUR SECAM ADJUSTMENT (III)

* The adjustment of contrast of NTSC and SECAM and that of NTSC COLOUR should be completed.

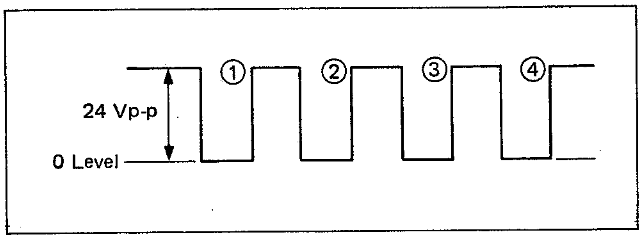
1. Input the SECAM COLOUR BAR PATTERN (composite) to video terminal A or B.
2. Set the system switch to the SECAM position.
3. Set the COLOUR/MONO SW on the front control panel to the "COLOUR" position.
4. Connect an oscilloscope between the TP-47B and TP-E (GND) within the CRT SOCKET P.C.B.
5. Adjust the S SUB COLOUR VR (R8265) within the DECODER P.C.B. so that ① , ② , ③ , and ④ are all in a straight line.



■ COLOUR (PAL) ADJUSTMENT (IV)

* The adjustment of the contrast of NTSC and SECAM and that of NTSC and SECAM COLOUR should be completed.

1. Input the PAL COLOUR BAR PATTERN (composite) to video terminal A or B.
2. Set the system switch to the PAL position.
3. Set the COLOUR/MONO SW on the front control panel to the "COLOUR" position.
4. Connect an oscilloscope between the TP-47B and TP-E (GND) within the CRT SOCKET P.C.B.
5. Adjust the P SUB COLOUR VR (R8310) within the DECODER P.C.B. so that ① , ② , ③ , and ④ are all in a straight line as shown below.

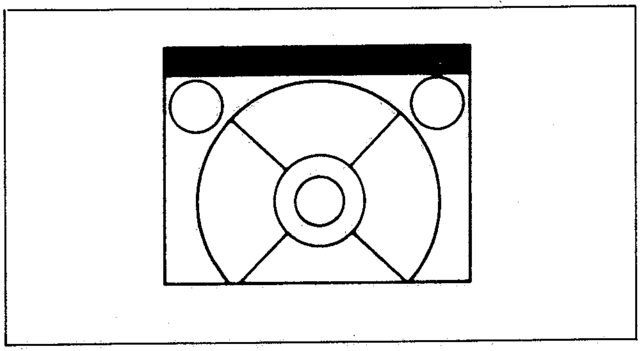


■ ADJUSTMENT OF PULSE CROSS

1. Set the Vf switch to the "AUTO" position.
2. Input monoscope pattern to the Video A or B terminal (Vf = 50 or 60 Hz signal).
3. Push the Pulse Cross switch on.
4. Rotate the Pulse Cross Phase Control VR (R2256) on the pulse cross printed-circuit board to eliminate brightness variation during vertical blanking period.

■ ADJUSTMENT OF BRIGHTNESS

1. Finish the contrast and colour adjustment beforehand.
2. Set the Bright VR to the central position.
3. Input monoscope signal to the Video A or B terminal.
4. Rotate the V. Hold VR to allow the vertical fly-back period to be monitored.
5. Rotate the Sub Bright VR (R4207) while monitoring the vertical fly-back period, adjust the brightness to the point just before the vertical fly-back period turns black. At this time, try not to make it excessively bright.

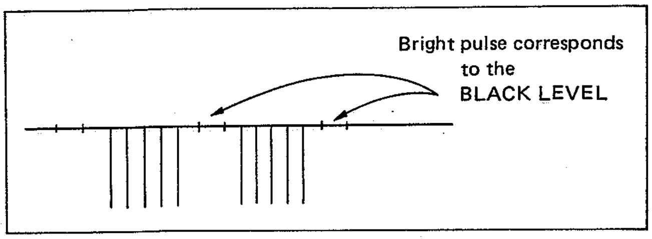


■ COMPOSITE VIDEO WHITE BALANCE ADJUSTMENT (NTSC)

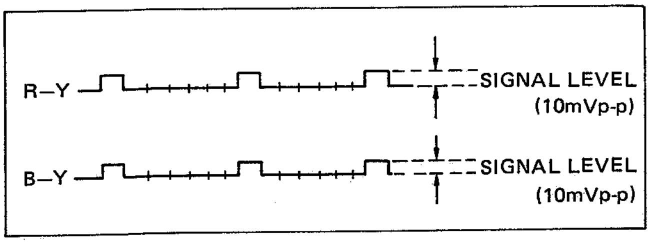
1. Push the system changeover SW, NTSC on.
2. Input the pedestal signal (Black-level pattern) to Video A or B terminal.
3. Adjust the CONTRAST VR on the front panel, then adjust the COMPOSITE WHITE BALANCE VR (R1778) so that the white balance on the picture will be stable.

■ ADJUSTMENT OF RGB BRIGHT & WHITE BALANCE

1. Push the Input changeover SW, ANALOG RGB on.
2. BRIGHT, CONTRAST, COLOR adjustment and the contrast adjustment of ANALOG RGB should be already finished.
3. Input the ANALOG RGB signal (cross-hatch pattern) to each RGB Input terminal.
4. Connect an oscilloscope to TP-47B on the CRT Socket PB Ass'y. (Voltage range is fixed to 10V).
5. Adjust the RGB BRIGHT VR (R1768) so that the Bright pulse corresponds to the Black level, as shown in the figure below.



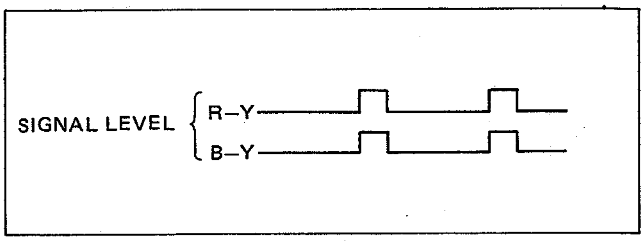
6. Connect each oscilloscope (two waveforms) simultaneously to TP-(B-Y) and TP-(R-Y) on the Signal PB Ass'y. (Power supply range is fixed to 5mV)
7. Adjust R LEVEL VR (R1737) and RGB WHITE BALANCE VR (R1773) so that the signal level of both B-Y and R-Y will be adjusted as the figure below.



8. Input the monochrome-scope signal, and by handling the COLOR/MONO SW, confirm that the White Balance will be stable.

■ ADJUSTMENT OF COMPONENT WHITE BALANCE

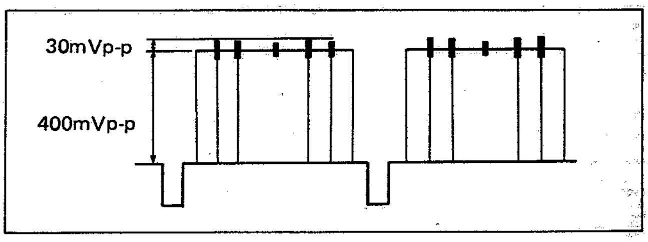
1. Push the Input changeover SW, Component Level on.
2. Adjustment of white balance should be already finished.
3. Input 1.0 Vp-p luminance signal to the Y Input terminal of the component.
4. Connect each oscilloscope (two waveforms) simultaneously to TP-(B-Y) and TP-(R-Y) on the Signal PB Ass'y. (Voltage range is fixed to 5mV)
5. After adjusting, confirm that the white balance will be stable on the picture even if the COLOR/MONO SW on the front panel may be switched ON or OFF.



6. After adjusting, confirm that the white balance will be stable on the picture even if the COLOR/MONO SW on the front panel may be switched ON or OFF.

■ ADJUSTMENT OF APERTURE CONTROL

1. Push the Input changeover SW Video A or B on. (Choose each corresponding switch that is input to either Video A terminal or B terminal on.)
2. Turn the APERTURE VR on the front panel to the click position.
3. Input NTSC monochrome-scope pattern to Video A terminal or B terminal.
4. Connect an oscilloscope between TP-Y and GND on the Signal PB Ass'y.
5. Adjust the SUB APERTURE VR on the front panel,so that when the low-pass component of the signal is 400 mVp-p, high-pass component of the four vertical lined area of monochrome-scope pattern will be 30 mVp-p.



REPLACEMENT PARTS LIST

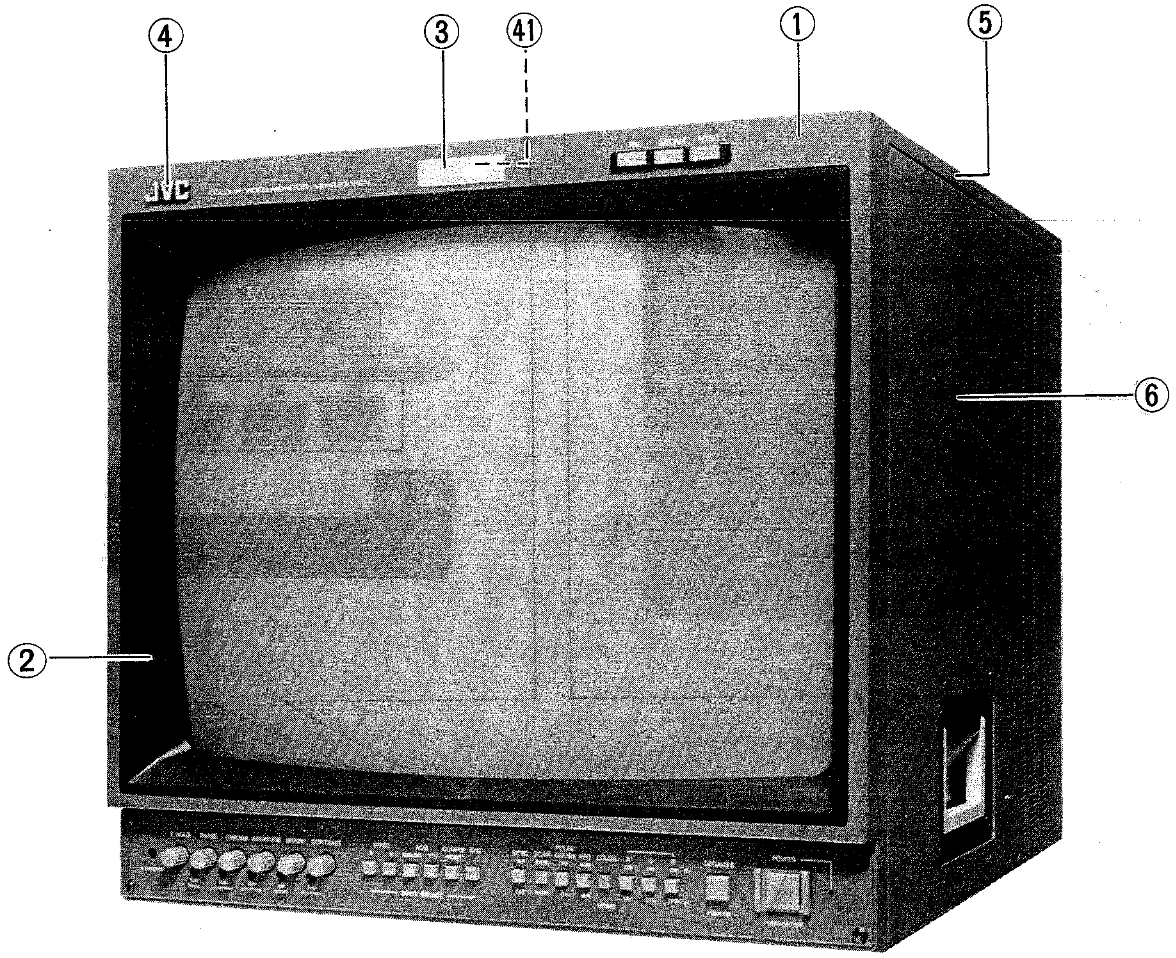
MAIN REPLACEMENT PARTS LIST

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
CRT & TUNER				
		CE40961-00A	PC MAGNET	
		CJ30033-00A	WEDGE ASSY	(×5)
DY01	⚠	CJ27109-00A	DEFLECTION YOKE	
L01	⚠	CJ39730-00B	DEG COIL	
V01	⚠	M48JYE32X	PICTURE TUBE	
VARIABLE RESISTOR				
R1141		QVPC609-103H	VR (RGB LEVEL)	10kΩ B
R1158		QVPC609-102H	VR (Y. LEVEL)	1kΩ B
R1737		QVPC609-501H	VR (R. LEVEL)	500 Ω B
R1768		QVPC609-203H	VR (RGB BRIGHT)	20kΩ B
R1773		QVPC609-104H	VR (RGB W/B)	100kΩ B
R1776		QVPC609-501H	VR (COMPONENT W/B)	500 Ω B
R1778		QVPC609-104H	VR (COMPOSITE VIDEO W/B)	100kΩ B
R2256		QVPC609-503H	VR (PULSE CROSS PHASE CONTROL)	50kΩ B
R2415		QVPCA02-501H	VR (V. CENTER)	500 Ω B
R2421		QVPCA02-501H	VR (NORMAL V. HEIGHT)	500 Ω B
R2422		QVPCA02-202H	VR (NARROW V. HEIGHT)	2kΩ B
R2423		QVPCA02-501H	VR (V. LIN)	500 Ω B
R2503		QVPCA02-502H	VR (H. HOLD)	5kΩ B
R2523		QVZ3102-008	VR (H. CENTER)	500 Ω B
R2543		QVPE609-103M	VR (HB ADJ.)	10kΩ B
R4116		QVPC601-502H	VR (UNDER R CUT OFF)	5kΩ B
R4117		QVPC601-502H	VR (UNDER G CUT OFF)	5kΩ B
R4118		QVPC601-502H	VR (UNDER B CUT OFF)	5kΩ B
R4120		QVPC601-502H	VR (NORMAL R CUT OFF)	5kΩ B
R4121		QVPC601-502H	VR (NORMAL G CUT OFF)	5kΩ B
R4122		QVPC601-502H	VR (NORMAL B CUT OFF)	5kΩ B
R4129		QVPC601-102H	VR (R DRIVE)	1kΩ B
R4132		QVPC601-102H	VR (G DRIVE)	1kΩ B
R4135		QVPC601-102H	VR (B DRIVE)	1kΩ B
R4202		QVPC601-103H	VR (SUB CONT.)	10kΩ B
R4204		QVCA029-CB14M	VR (CONTRAST)	10kΩ B
R4207		QVPC601-103H	VR (SUB BRIGHT)	10kΩ B
R4209		QVCA029-CB14M	VR (BRIGHT)	10kΩ B
R4212		QVPC601-103H	VR (SUB APERTURE)	10kΩ B
R4214		QVCA029-CB14M	VR (APERTURE)	10kΩ B
R4217		QVPC601-103H	VR (SUB CHROMA)	10kΩ B
R4219		QVCA029-CB14M	VR (CHROMA)	10kΩ B
R4222		QVPC601-103H	VR (SUB PHASE)	10kΩ B
R4224		QVCA029-CB14M	VR (PHASE)	10kΩ B
R4226		QVCA028-CB53M	VR (V. HOLD)	5kΩ B
R4227		QVPC601-103H	VR (H. POSI.)	10kΩ B
R4230		QVPC609-104H	VR (COMP LEVEL)	100kΩ B
R8106		QVPC609-202H	VR (COMB 1)	2kΩ B
R8117		QVPC609-501H	VR (COMB 2)	500Ω B
R8120		QVPC609-202H	VR (COMB PHASE)	2kΩ B
R8142		QVPC609-102H	VR (N. SUB CONT)	1kΩ B
R8167		QVPC609-203H	VR (N. SUB COLOR)	20kΩ B
R8169		QVPC609-203H	VR (SUB TINT)	20kΩ B
R8218		QVPC609-102H	VR (P/S SUB CONT)	1kΩ B
R8265		QVPC609-203H	VR (S SUB COLOR)	20kΩ B
R8307		QVPC609-202H	VR (DL LEVEL)	2kΩ B
R8310		QVPC609-203H	VR (P SUB COLOR)	20kΩ B
R8318		QVPC609-104H	VR (CRAWLING)	100kΩ B
R9921		QVPE804-503H	VR (B1 ADJ.)	50kΩ B
TRANSFORMER				
T2502	⚠	A46022-BM	HOR DRIVE TRANSF	
T9901	⚠	CE41100-00B	SW TRANSF	
TRANSFORMER				
T9902	⚠	CE41059-00B	DRIVE TRANSF.	
T01		CJ27027-00B	FLYBACK TRANSF.	
DIODE				
D2001		RD7. 5E	ZENER DIODE	
D2402		05AZ75	ZENER DIODE	
D2513		MA4220 (M) -Y	ZENER DIODE	
D2514		MA4062 (M) -Y	ZENER DIODE	
D2701	⚠	HZ7B2LV1	ZENER DIODE	
D2710		MA4100 (M) -Y	ZENER DIODE	
D4101		GL-5PG23	L E D	POWER IND.
D4102		LD-701DU	L. E. D.	TALLY IND.
D4107		LD-701DU	L. E. D.	TALLY IND.
D4108		RD12E	ZENER DIODE	
D8208		RD8. 2E (B3)	ZENER DIODE	
D9901		LB-156-LFB	DIODE BRIDGE	
TRANSISTOR				
Q1402		2SC3946	SI. TRANSISTOR	R. OUT
Q1403		2SC1973	SI. TRANSISTOR	R. OUT
Q1502		2SC3946	SI. TRANSISTOR	G. OUT
Q1503		2SC1973	SI. TRANSISTOR	G. OUT
Q1602		2SC3946	SI. TRANSISTOR	B. OUT
Q1603		2SC1973	SI. TRANSISTOR	B. OUT
Q2502	⚠	2SD1555	SI. TRANSISTOR	H. OUT
IC				
IC1101		HD74LS367AP	I. C.	
IC1102		AN5860	I. C. (M)	
IC1103		HD74LS138P	I. C. (M)	
IC1104		AN5860	I. C. (M)	
IC1105		AN5867K	I. C. (M)	
IC1106		M51493P	I. C.	
IC1107		AN7805	I. C.	
IC1108		AN5860	I. C. (M)	
IC1109		AN5860	I. C. (M)	
IC1110		TC4538BP	I. C. (M)	
IC1301		UPC4559C	I. C.	
IC1302		UPC4559C	I. C.	
IC2101		TC4051BP	I. C.	
IC2102		TC4532BP	I. C.	
IC2201		TC4538BP	I. C. (M)	
IC2202		TC4538BP	I. C. (M)	
IC2203		TC4538BP	I. C. (M)	
IC2204		TC4538BP	I. C. (M)	
IC2205		TC4053BP	I. C.	
IC2206		TC4538BP	I. C. (M)	
IC2207		TC4538BP	I. C. (M)	
IC2401		AN5521	I. C. (M)	
IC2501		HA11423	I. C.	
IC2502		TA78012AP	I. C.	
IC2551		TC4066BP	I. C.	
IC2552		AN5560	I. C.	
IC2553		TC4538BP	I. C. (M)	
IC4101		AN5860	I. C. (M)	
IC6101		LA7016	I. C.	
IC6102		HD74LS86P	I. C.	
IC8101		AN5322K	I. C. (M)	
IC8102		TC4066BP	I. C.	
IC8201		TC4066BP	I. C.	
IC8202		AN5635N	I. C.	

SYMBOL. NO.	⚠	PART NO.	PART NAME	REMARKS
IC				
IC8203		AN5625N	I. C.	
IC8205		TC4538BP	I. C. (M)	
IC9901		STR54041S	I. C.	
IC9902	⚠	STR30110-A	I. C. (M)	
OTHERS				
		CM11076-D0A	AV TERMINAL ASSY	
		CM11068-B0D	FRONT PANEL ASSY	
		CM11069-A01	TOP COVER	
		CM43905-002	BUTTON	DEGAUSS
		CM43904-A02	POWER BUTTON	POWER
	⚠	CE40811-00Q	NOISE FILTER	
		CM40495-002	BUTTON	(×14)
		CM43906-002	VR KNOB	(×6)
CP2001	⚠	ICP-F50	IC PROTECTOR	
DL1103		CE41360-001	DELAY LINE	
DL1104		CE41360-001	DELAY LINE	
DL6101		CE41042-002	DELAY LINE	
DL8101		CE40410-001	1H DELAY LINE	
DL8102		CE40959-001	DELAY LINE	
DL8103		CE41422-001	DELAY LINE	
FR2530	⚠	QRZ0055-4R7M	F R	4. 7 Ω 1/2W J
FR8268	⚠	QRZ0054-180M	F R	18 Ω 1/4W J
F9901	⚠	QMF51E2-3R15S	FUSE	3. 15A
F9902	⚠	QMF51E2-2R0S	FUSE	2A
J6102		CH40326-009SN	D SUB 9S	
LF9901	⚠	CE40578-00A	LINE FILTER	
LF9952	⚠	CE40578-00A	LINE FILTER	
RY2501		CESK006-001	RELAY	
R9917	⚠	QRZ0054-100M	FR	10 Ω 1/4W J
SW2501		QSP2C22-C01	PUSH SWITCH	H. FREE RUN SW
S01	⚠	QSP4D21-C04	POWER SWITCH	POWER
S02	⚠	QSP4C11-C02	DEG SWITCH	DEGAUSS
S4101		QST2631-C02	PUSH SWITCH	VIDEO A, B, Y/C358
S4102		QST2831-C01	PUSH SWITCH	SYNC, SCAN, AFC
S4103		QSS1F22-C03	SLIDE SWITCH	COMP LEVEL
S4104		QSS1F22-C03	SLIDE SWITCH	AFC
S4105		QSS1F22-C03	SLIDE SWITCH	MATRIX
S4106		QSS1F22-C03	SLIDE SWITCH	NOTCH
S4107		QSS1F22-C03	SLIDE SWITCH	SERVICE SW
S4108		QSS1F22-C03	SLIDE SWITCH	TALLY
S4109		QST3361-C01	PUSH SWITCH	PAL/SECAM/NTSC
S6101		QSS1C22-C02	SLIDE SWITCH	**TERMINATION SW**
S6102		QSS1C22-C02	SLIDE SWITCH	〃
S6103		QSS1C22-C02	SLIDE SWITCH	〃
S6104		QSS1C22-C02	SLIDE SWITCH	〃
S6105		QSS1C22-C02	SLIDE SWITCH	〃
S6106		QSS1C22-C02	SLIDE SWITCH	〃
S6107		QSS1C22-C02	SLIDE SWITCH	〃
S6108		QSS1C22-C02	SLIDE SWITCH	〃
S6109		QSS1C22-C02	SLIDE SWITCH	〃
S6110		QSS1C22-C02	SLIDE SWITCH	TTL MODE SW
S6111		QSS1C23-C02	SLIDE SWITCH	Vf SW
TH9901	⚠	A76038-T	POSISTOR	
X8101		A76351-D	CRYSTAL	
X8201		A76090	CRYSTAL	

■ CHASSIS AND CABINET PARTS LIST

	VIEW NO.	SYMBOL NO.	PART NO.	PART NAME	REMARKS
	1		CM11068-B0D	FRONT PANEL ASSY	
	2		CM11067-B03-M0	ESCUTHEON	
	3		CM44530-C01	TALLY PLATE	
	4		PGD30011-1	MARK	
	5		CM11069-A01	TOP COVER	
	6		CM11071-C0A	SIDE COVER ASSY	(R)
	7		CM11070-B0A	SIDE COVER ASSY	(L)
	8		CM11072-B0A	BASE ASSY	
	9		CM21312-A01	CONTROL PLATE	
	10		CM43713-001	LENS	
	11		CM30861-042	SPRING	
	12		CM44523-001	POWER SW PROTECT	
	13		CM43905-002	BUTTON	DEGAUSS
	14		CM43904-A02	POWER BUTTON	POWER
	15		CM40495-002	BUTTON	(×14)
	16		CM43906-002	VR KNOB	(×6)
⚠	17	S01	QSP4D21-C04	POWER SWITCH	POWER
⚠	18	S02	QSP4C11-C02	DEG SWITCH	DEGAUSS
	19		CM44756-001	SCREW	(×4)
⚠	20	V01	M48JYE32X	PICTURE TUBE	
⚠	21	L01	CJ39730-00B	DEG COIL	
	22		CH30312-00B	BRAIDED ASSY	
	23		CH41987-00B	BRAIDED SUB ASSY	(×2)
⚠	24	DY01	CJ27109-00A	DEFLECTION YOKE	
	25		CE40961-00A	PC MAGNET	
	26		CJ30033-00A	WEDGE ASSY	(×5)
	27		CM44695-001	BARRIER	
	28		SSSB4008M	TAP SCREW	(×8) HANDLE
⚠	29	T01	CJ27027-00B	FLYBACK TRANSF.	
⚠	30		CE40811-00Q	NOISE FILTER	
	31		A46445	FOCUS COVER	
	32		CJ40713-001	FOCUS COVER	
	33		CM11075-A03	BACK COVER	
	34		CM45400-00B	ASSY SCREW	(×14)
	35		CN40054-00F	FOOT ASSY	(×4)
	36		SBSB4012Z	TAP SCREW	(×4) FOOT
	37		CM21335-003 (R)	ROLL R LABEL	
	38		CH40327-A04	RETAINER	(×2)
	39	S4109	QST3361-C01	PUSH SWITCH	PAL/SECAM/NTSC
	40	D4101	GL-5PG23	LED	POWER IND.
	41	D4102, 07	LD-701DU	LED	TALLY IND.
	42	S4101	QST2631-C02	PUSH SWITCH	VIDEO A/B, YC358
	43	S4102	QST2831-C01	PUSH SWITCH	SYNC SCAN AFC
⚠	44	F9901	QMF51E2-3R15S	FUSE	3.15A
⚠	45	F9902	QMF51E2-2R0S	FUSE	2A
	46	J6102	CH40326-009SN	D SUB 9S	
⚠	47	Q2502	2SD1555	SI TRANSISTOR	H. OUT
	48		CM32550-00B	HANDLE ASSY	(×2)
	49		CM44627-A01	BUTTON	(×3)
	50		CM44755-001	PLATE	
	100		CM11076-D0A	AV TERMINAL ASS'Y	Include No. 101–107
	101		CE41358-007S	7P CONNECTOR	Y/C358 OUT
	102		CE41358-007P	7P CONNECTOR	Y/C358 IN
	103		CH40319-A0A	8P CONNECTOR	
	104		CEM6002-00A	BNC CONNECTOR	(×18)
	105		CE40451-001	CANNON CONNECTOR	
	106		RM15QR-12P	12P CONNECTOR	MП
	107		RM15TRD-12P	12P CONNECTOR	BETACAM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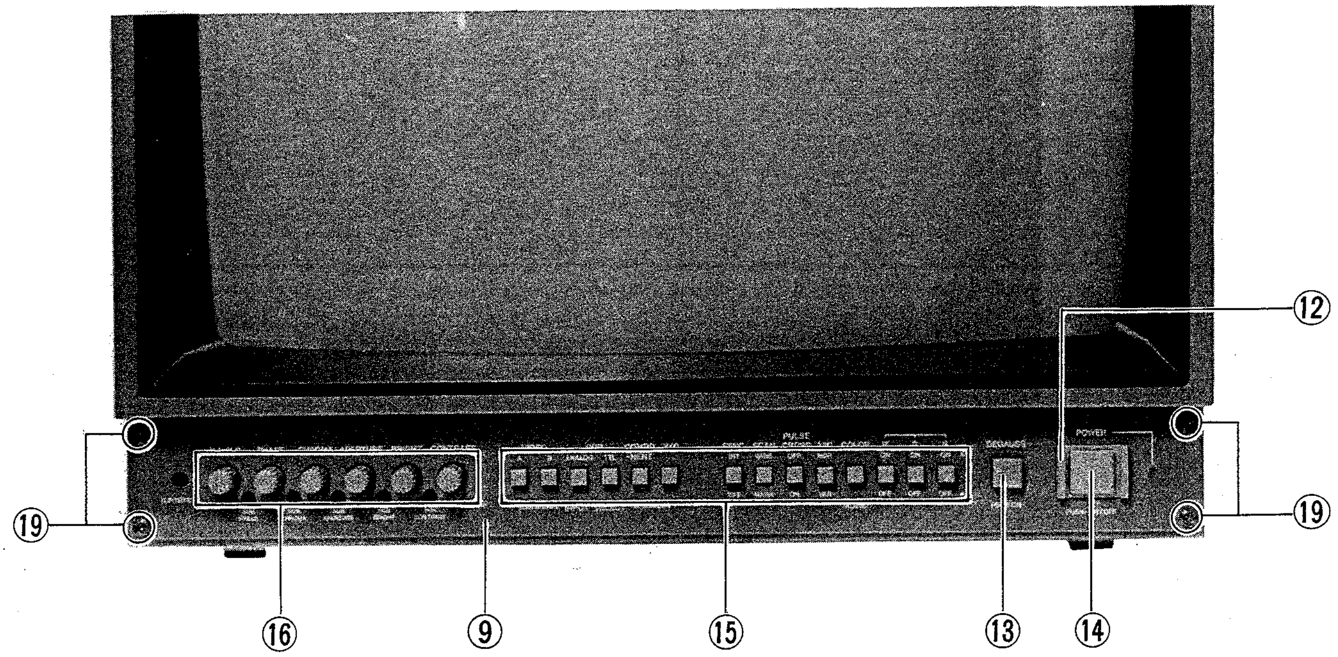
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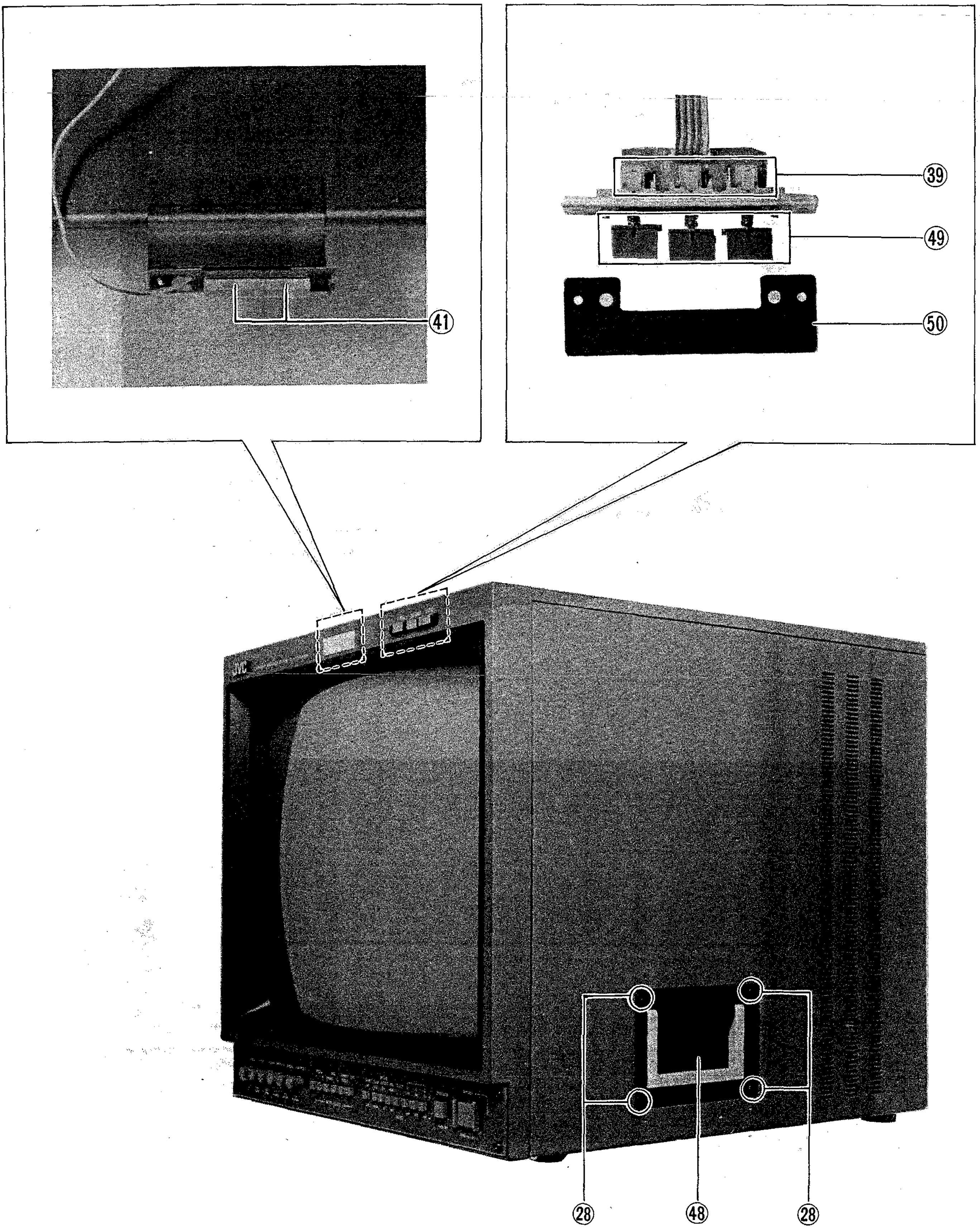
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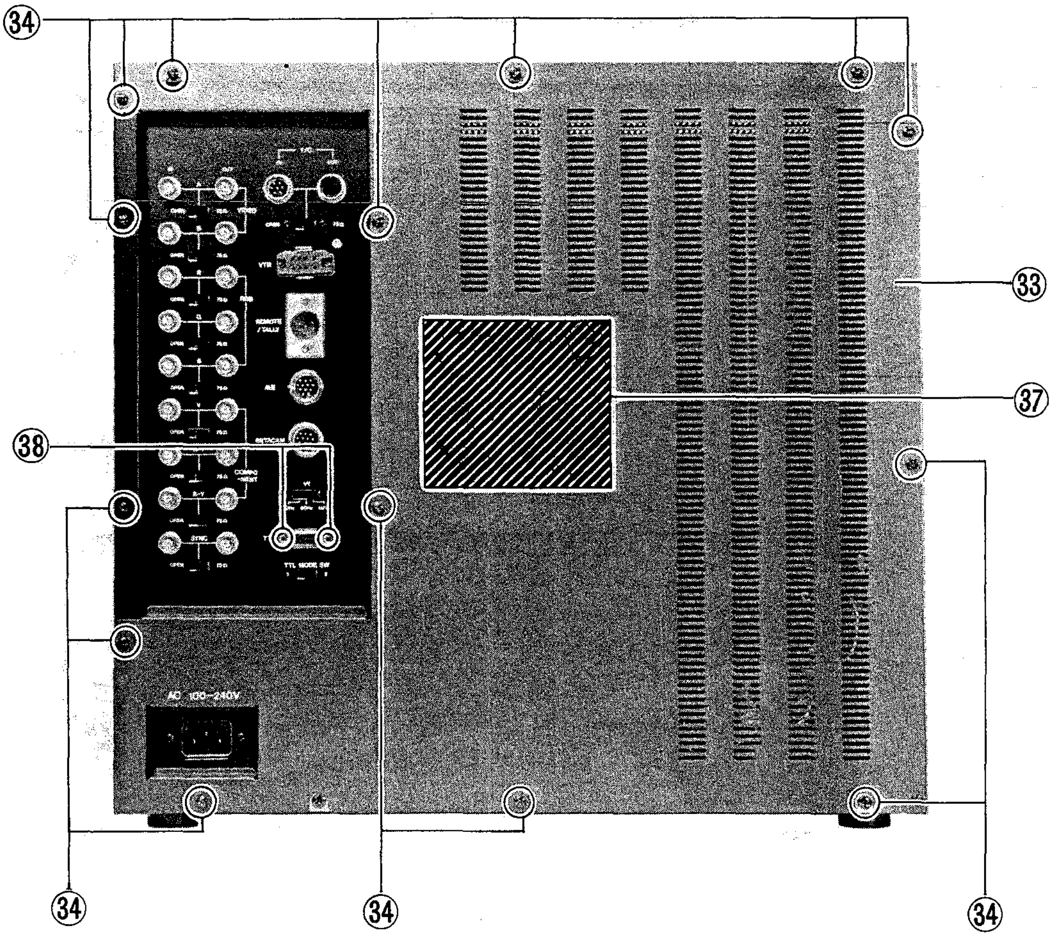
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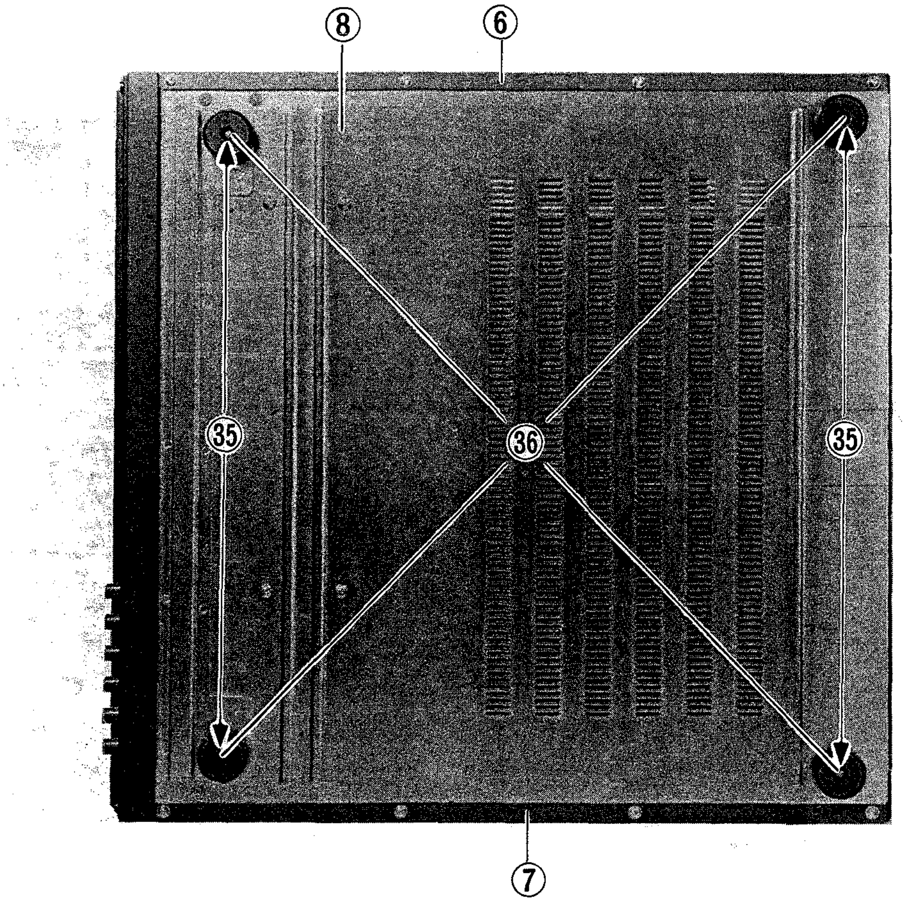
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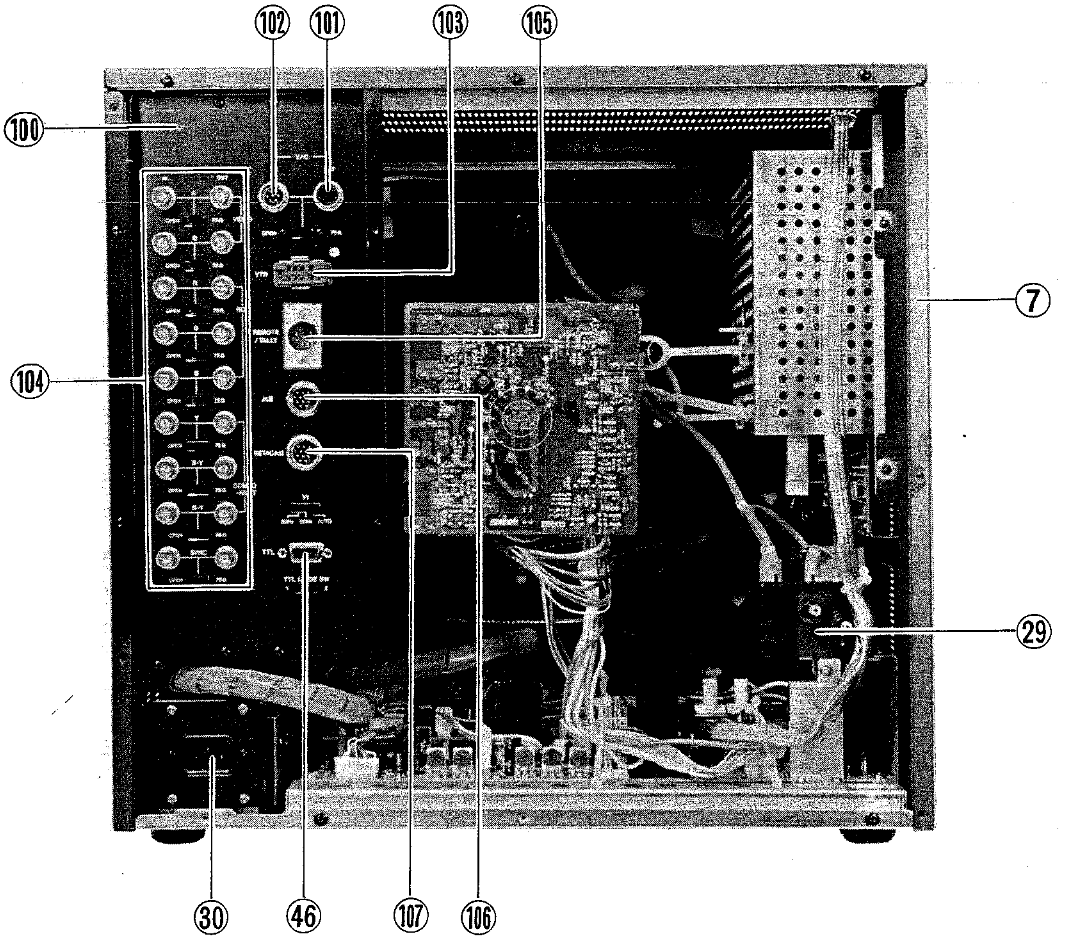
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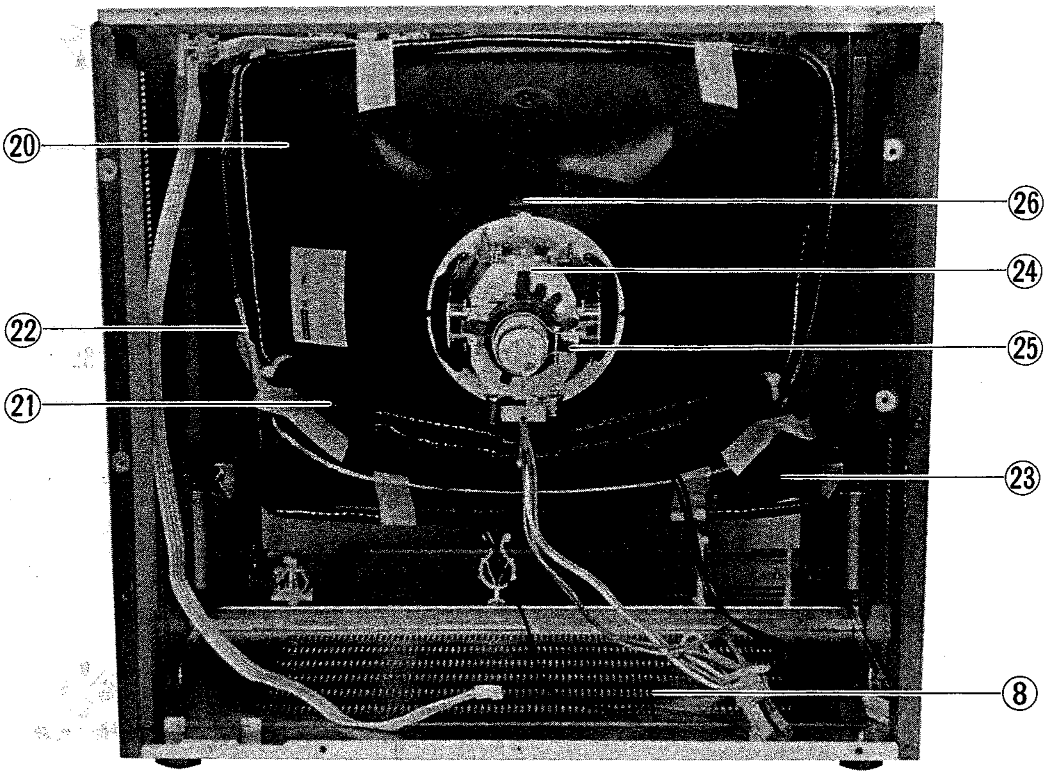
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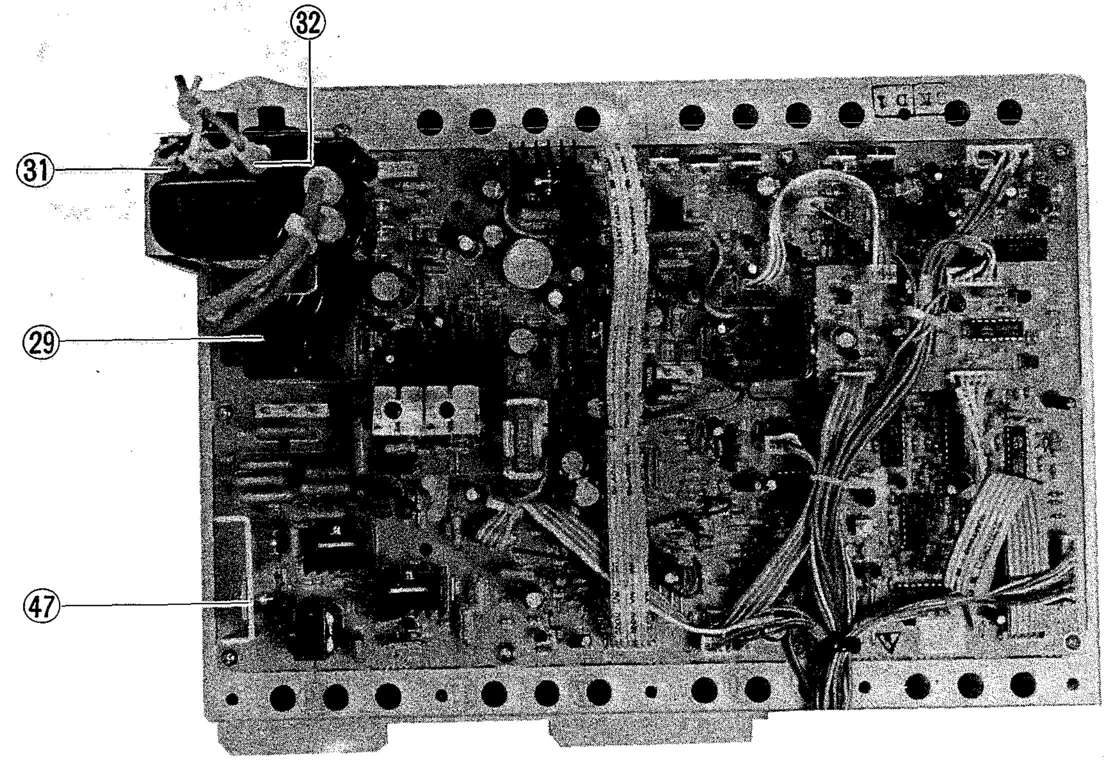
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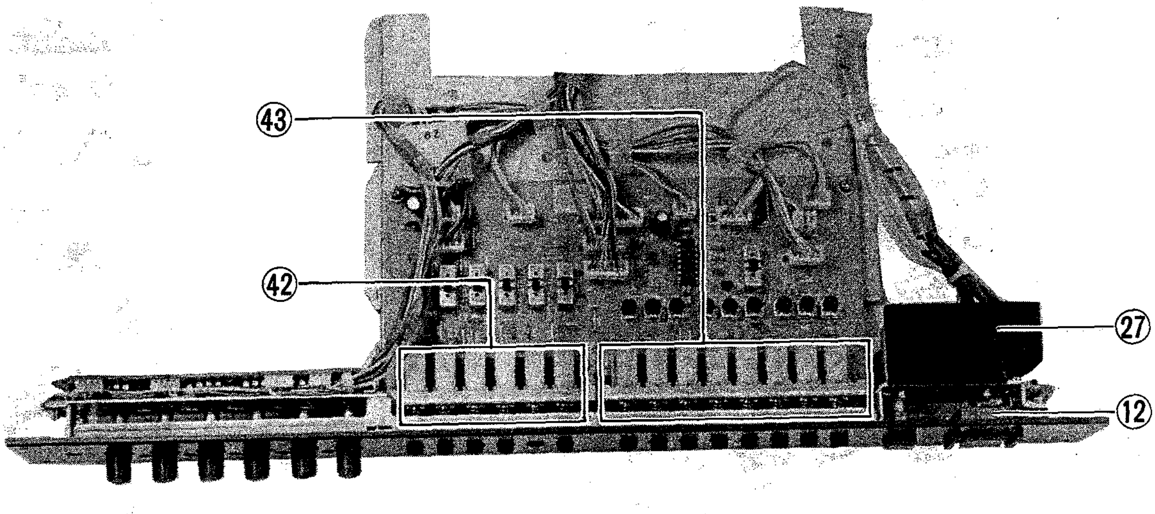
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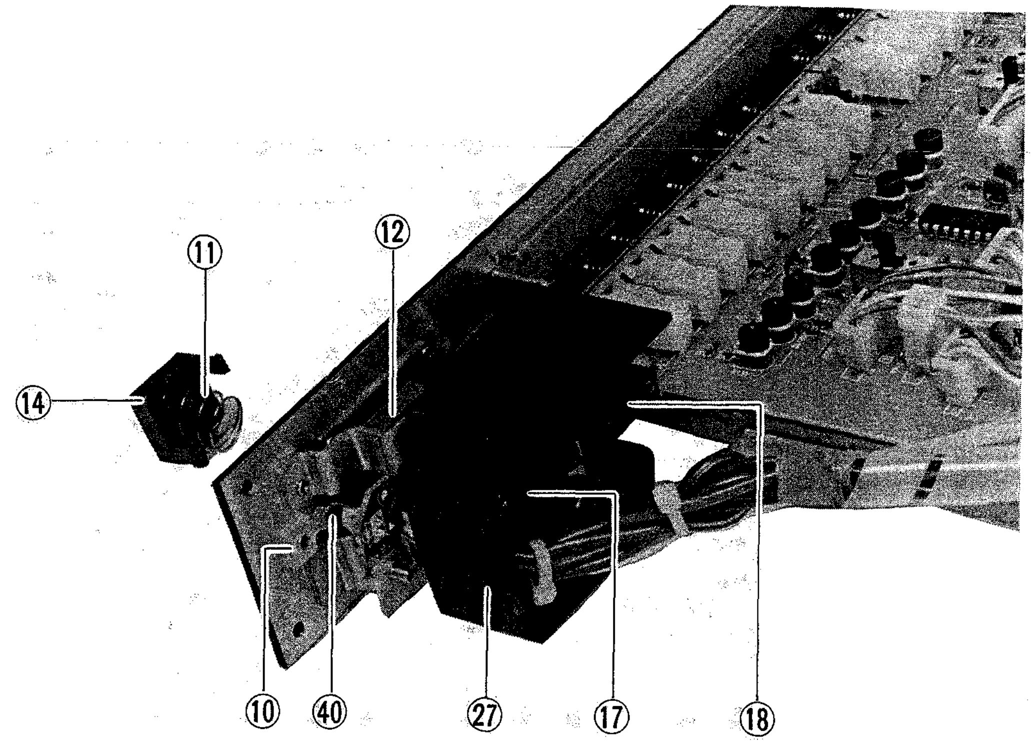
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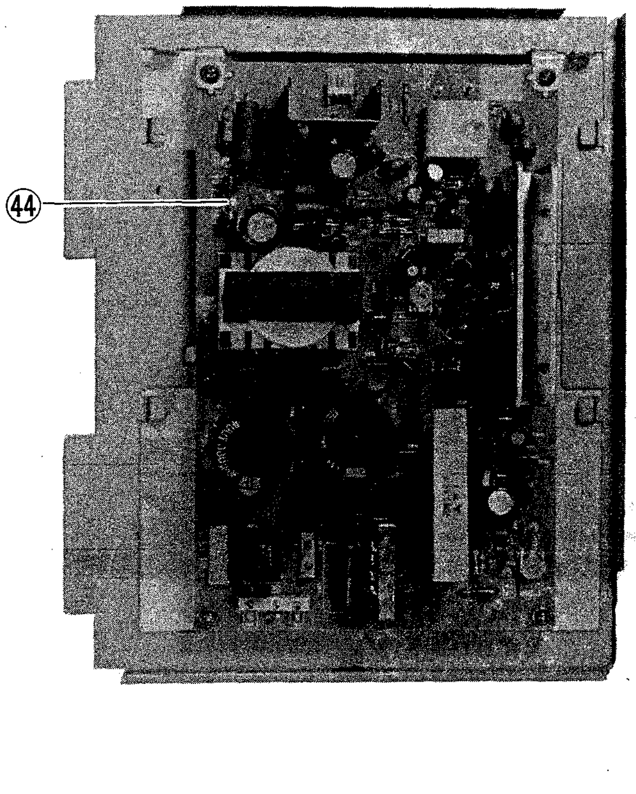
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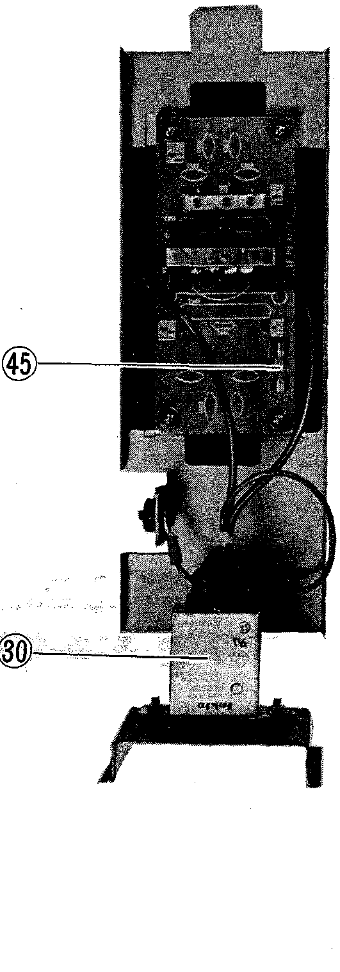
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PC BOARD PARTS LIST

■ FX-1009A (SIGNAL/CRT SOCKET P.C.B. ASS'Y)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE RESISTOR			
R1141	QVPC609-103H	VR (RGB LEVEL)	10kΩ B
R1158	QVPC609-102H	VR (Y. LEVEL)	1kΩ B
R1737	QVPC609-501H	VR (R. LEVEL)	500 Ω B
R1768	QVPC609-203H	VR (RGB BRIGHT)	20kΩ B
R1773	QVPC609-104H	VR (RGB W/B)	100kΩ B
R1776	QVPC609-501H	VR (COMPONENT W/B)	500 Ω B
R1778	QVPC609-104H	VR (COMPOSITE VIDEO W/B)	100kΩ B
RESISTOR			
R1240	QRG029J-330	OM R	33 Ω 2W J
⚠ R1276	QRG019J-330S	OM R	33 Ω 1W J
R1283	QRV141F-1371AY	MF R	1. 37kΩ 1/4W F
R1289	QRV141F-1371AY	MF R	1. 37kΩ 1/4W F
R1411	QRZ0069-472	UNF R	4. 7kΩ 5W K
R1511	QRZ0069-472	UNF R	4. 7kΩ 5W K
R1611	QRZ0069-472	UNF R	4. 7kΩ 5W K
CAPACITOR			
C1106	QEN61VM-475Z	BP E CAP.	4. 7μF 35V M
C1108	QEN61VM-475Z	BP E CAP.	4. 7μF 35V M
C1111	QEN61VM-475Z	BP E CAP.	4. 7μF 35V M
C1112	QFV71HJ-224MZ	TF CAP.	0. 22μF 50V J
C1121	QEN61HM-105Z	BP E CAP.	1μF 50V M
C1124	QEN61CM-106Z	BP E CAP.	10μF 16V M
C1127	QEN61CM-106Z	BP E CAP.	10μF 16V M
C1129	QEN61CM-106Z	BP E CAP.	10μF 16V M
C1140	QFV71HJ-104MZ	TF CAP.	0. 1μF 50V J
C1143	QFV71HJ-224MZ	TF CAP.	0. 22μF 50V J
C1144	QFV71HJ-224MZ	TF CAP.	0. 22μF 50V J
C1176	QEN60JM-476Z	BP E CAP.	47μF 6. 3V M
C1177	QFV71HJ-154MZ	TF CAP.	0. 15μF 50V J
C1179	QEN60JM-476Z	BP E CAP.	47μF 6. 3V M
C1180	QFV71HJ-154MZ	TF CAP.	0. 15μF 50V J
C1182	QFV71HJ-154MZ	TF CAP.	0. 15μF 50V J
C1184	QEN60JM-476Z	BP E CAP.	47μF 6. 3V M
C1190	QFV81HJ-154M	TF CAP.	0. 15μF 50V J
C1191	QFV81HJ-154M	TF CAP.	0. 15μF 50V J
C1192	QFV81HJ-154M	TF CAP.	0. 15μF 50V J
C1195	QFV71HJ-474MZ	TF CAP.	0. 47μF 50V J
C1196	QFV71HJ-474MZ	TF CAP.	0. 47μF 50V J
C1198	QFV71HJ-224MZ	TF CAP.	0. 22μF 50V J
C1206	QEN61CM-106Z	BP E CAP.	10μF 16V M
C1207	QEN61CM-106Z	BP E CAP.	10μF 16V M
C1208	QEN61CM-106Z	BP E CAP.	10μF 16V M
C1209	QCT25CH-220AZ	C CAP.	22pF 50V J
C1210	QCT25CH-180Z	C CAP.	18pF 50V J
C1214	QFV71HJ-154MZ	TF CAP.	0. 15μF 50V J
C1215	QFV71HJ-154MZ	TF CAP.	0. 15μF 50V J
C1216	QFV71HJ-154MZ	TF CAP.	0. 15μF 50V J
C1217	QFV71HJ-154MZ	TF CAP.	0. 15μF 50V J
C1236	QFV71HJ-224MZ	TF CAP.	0. 22μF 50V J
C1237	QFV71HJ-224MZ	TF CAP.	0. 22μF 50V J
C1238	QFV81HJ-474M	TF CAP.	0. 47μF 50V J
C1244	QFV81HJ-224M	TF CAP.	0. 22μF 50V J
C1305	QCZ9016-103A	C CAP.	0. 01μFAC400V P
C1307	QEH52EM-336M	E CAP.	33μF 250V M
COIL			
L1101	A76186-10Z	PEAKING COIL	10μH
L1102	A76186-10Z	PEAKING COIL	10μH
L1103	A76186-10Z	PEAKING COIL	10μH
L1104	A76186-10Z	PEAKING COIL	10μH
L1105	A76186-10	PEAKING COIL	10μH
L1106	A76186-10	PEAKING COIL	10μH
L1107	A76186-1000Z	PEAKING COIL	1000μH
L1401	A76186-8. 2Z	PEAKING COIL	8. 2μH
L1402	A76186-10Z	PEAKING COIL	10μH
L1501	A76186-8. 2Z	PEAKING COIL	8. 2μH
L1502	A76186-10Z	PEAKING COIL	10μH
L1601	A76186-8. 2Z	PEAKING COIL	8. 2μH
L1602	A76186-10Z	PEAKING COIL	10μH
DIODE			
D1101	1SS133-Y	SI. DIODE	
D1102	1SS133-Y	SI. DIODE	
D1103	1SS133-Y	SI. DIODE	
D1104	1SS133-Y	SI. DIODE	
D1105	1SS133-Y	SI. DIODE	
D1106	1SS133-Y	SI. DIODE	
D1107	1SS133-Y	SI. DIODE	
D1108	1SS133-Y	SI. DIODE	
D1109	1SS133-Y	SI. DIODE	
D1110	1SS133-Y	SI. DIODE	
D1111	1SS133-Y	SI. DIODE	
D1112	1SS133-Y	SI. DIODE	
D1113	1SS133-Y	SI. DIODE	
D1114	1SS133-Y	SI. DIODE	
D1115	1SS133-Y	SI. DIODE	
D1118	1SS133	SI. DIODE	
D1119	1SS133	SI. DIODE	
D1120	1SS133	SI. DIODE	
D1121	1SS133	SI. DIODE	
D1122	1SS133	SI. DIODE	
D1123	1SS133	SI. DIODE	
D1124	1SS133	SI. DIODE	
D1125	1SS133	SI. DIODE	
D1126	1SS133	SI. DIODE	
D1127	1SS133	SI. DIODE	
D1128	1SS133	SI. DIODE	
D1301	1SS133-Y	SI. DIODE	
D1302	1SR124-400	SI. DIODE	
D1303	1SR124-400	SI. DIODE	
D1401	1SS133-Y	SI. DIODE	
D1501	1SS133-Y	SI. DIODE	
D1601	1SS133-Y	SI. DIODE	
TRANSISTOR			
Q1101	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1102	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1103	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1104	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1107	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1109	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1110	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1111	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1112	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1113	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1114	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1115	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1116	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1117	2SC1815 (O, Y) -Y	SI. TRANSISTOR	

SYMBOL NO.	PART NO.	PART NAME	REMARKS
TRANSISTOR			
Q1118	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1119	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1120	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1121	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1122	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1123	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1124	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1125	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1126	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1127	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1128	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1129	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1130	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1131	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1132	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1133	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1134	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1135	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1136	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1137	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q1138	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1139	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q1140	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1141	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q1142	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q1144	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1147	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1148	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1149	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1150	DTC-124	SI. TRANSISTOR	
Q1151	DTC-124	SI. TRANSISTOR	
Q1152	DTC-124	SI. TRANSISTOR	
Q1153	DTC-124	SI. TRANSISTOR	
Q1154	DTC-124	SI. TRANSISTOR	
Q1155	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1156	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1157	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1158	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1160	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q1161	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1162	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1163	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q1164	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1165	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1166	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1167	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1172	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1401	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1402	2SC3946	SI. TRANSISTOR	R. OUT
Q1403	2SC1973	SI. TRANSISTOR	R. OUT
Q1404	2SK68A	FET	
Q1501	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1502	2SC3946	SI. TRANSISTOR	G. OUT
Q1503	2SC1973	SI. TRANSISTOR	G. OUT
Q1504	2SK68A	FET	
Q1601	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q1602	2SC3946	SI. TRANSISTOR	B. OUT
Q1603	2SC1973	SI. TRANSISTOR	B. OUT

SYMBOL NO.	PART NO.	PART NAME	REMARKS
TRANSISTOR			
Q1604	2SK68A	FET	
IC			
IC1101	HD74LS367AP	I. C.	
IC1102	AN5860	I. C. (M)	
IC1103	HD74LS138P	I. C. (M)	
IC1104	AN5860	I. C. (M)	
IC1105	AN5867K	I. C. (M)	
IC1106	M51493P	I. C.	
IC1107	AN7805	I. C.	
IC1108	AN5860	I. C. (M)	
IC1109	AN5860	I. C. (M)	
IC1110	TC4538BP	I. C. (M)	
IC1301	UPC4559C	I. C.	
IC1302	UPC4559C	I. C.	
OTHERS			
⚠	A75522-C	CRT SOCKET	
DL1103	CE41360-001	DELAY LINE	
DL1104	CE41360-001	DELAY LINE	
SG1301	CE41220-301	ARRESTOR	
SG1401	CE41220-301	ARRESTOR	
SG1501	CE41220-301	ARRESTOR	
SG1601	CE41220-301	ARRESTOR	

■ FX-2002A (DEF/PULSE CROSS P. C. B. ASS'Y)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE RESISTOR			
R2256	QVPC609-503H	VR (PULSE CROSS PHASE CONTROL)	50kΩ B
R2415	QVPCA02-501H	VR (V. CENTER)	500 Ω B
R2421	QVPCA02-501H	VR (NORMAL V. HEIGHT)	500 Ω B
R2422	QVPCA02-202H	VR (NARROW V. HEIGHT)	2kΩ B
R2423	QVPCA02-501H	VR (V. LIN)	500 Ω B
R2503	QVPCA02-502H	VR (H. HOLD)	5kΩ B
R2523	QVZ3102-008	VR (H. CENTER)	500 Ω B
R2543	QVPE609-103M	VR (HB ADJ.)	10kΩ B
RESISTOR			
R2055	QRG029J-822A	OM R	8.2kΩ 2W J
R2413	QRG019J-102S	OM R	1kΩ 1W J
R2417	QRX019J-1R8S	MF R	1.8 Ω 1W J
R2418	QRG019J-391S	OM R	390 Ω 1W J
R2419	QRX029J-1R2A	MF R	1.2 Ω 2W J
R2426	QRX029J-1R8A	MF R	1.8 Ω 2W J
R2515	QRG029J-562A	OM R	5.6kΩ 2W J
R2516	QRX029J-1R2A	MF R	1.2 Ω 2W J
R2520	QRG029J-182A	OM R	1.8kΩ 2W J
R2524	QRG019J-151S	OM R	150 Ω 1W J
R2525	QRG019J-151S	OM R	150 Ω 1W J
R2529	QRX029J-R47A	MF R	0.47 Ω 2W J
R2532	QRG019J-471S	OM R	470 Ω 1W J
R2533	QRG029J-102A	OM R	1kΩ 2W J
R2534	QRG029J-471A	OM R	470 Ω 2W J
R2538	QRG019J-102S	OM R	1kΩ 1W J
R2539	QRG019J-102S	OM R	1kΩ 1W J
R2540	QRG029J-272A	OM R	2.7kΩ 2W J
R2541	QRG039J-153A	OM R	15kΩ 3W J
R2546	QRG039J-100A	OM R	10 Ω 3W J
R2548	QRG029J-152A	OM R	1.5kΩ 2W J
R2549	QRG029J-152A	OM R	1.5kΩ 2W J
R2550	QRG029J-472A	OM R	4.7kΩ 2W J
⚠ R2702	CJ39622-00F	R BLOCK	
R2704	QRX019J-4R7S	MF R	4.7 Ω 1W J
CAPACITOR			
C2052	QFP32GK-563M	PP CAP.	0.056μF 400V K
C2101	QEN61CM-106Z	BP E CAP.	10μF 16V M
C2102	QEN61CM-106Z	BP E CAP.	10μF 16V M
C2103	QEN61CM-106Z	BP E CAP.	10μF 16V M
C2104	QEN61CM-106Z	BP E CAP.	10μF 16V M
C2105	QEN61CM-106Z	BP E CAP.	10μF 16V M
C2111	QEKC1HM-335GMZ	E CAP.	3.3μF 50V M
C2117	QEKC1CM-106GMZ	E CAP.	10μF 16V M
C2207	QCT25CH-330Z	C CAP.	33pF 50V J
C2208	QCT25CH-680AZ	C CAP.	68pF 50V J
C2218	QFP31HJ-183S	PP CAP.	0.018μF 50V J
C2401	QEE61VK-225BZ	TAN. CAP.	2.2μF 35V K
C2403	QFZ0083-104MZ	M CAP.	0.1μF 50V K
C2408	QEKC1VM-475GMZ	E CAP.	4.7μF 35V M
C2409	QEE51CK-106B	TAN. CAP.	10μF 16V K
C2411	QFZ0083-104MZ	M CAP.	0.1μF 50V K
C2420	QEN52AM-474	BP E CAP.	0.47μF 100V M
C2423	QFZ0083-683MZ	M CAP.	0.068μF 50V K
C2502	QFP31HJ-332S	PP CAP.	3300pF 50V J
C2509	QETC2AM-225Z	E CAP.	2.2μF 100V M
C2514	QFZ0083-104MZ	M CAP.	0.1μF 50V K
⚠ C2517	QFZ0081-1001S	MPP CAP.	1000pF 1600V ±3%
⚠ C2518	QFZ0081-1501S	MPP CAP.	1500pF 1600V ±3%

SYMBOL NO.	PART NO.	PART NAME	REMARKS
CAPACITOR			
C2519	QFZ0089-534S	MPP CAP.	0.53μF 200V J
⚠ C2521	QFZ0081-2501S	MPP CAP.	2500pF 1600V ±3%
⚠ C2522	QFM72DK-223M	M CAP.	0.022μF 200V K
⚠ C2523	QFZ0081-1801S	MPP CAP.	1800pF 1600V ±3%
⚠ C2524	QFM72DK-104M	M CAP.	0.1μF 200V K
⚠ C2525	QFZ0081-2201S	MPP CAP.	2200pF 1600V ±3%
TRANSFORMER			
⚠ T2502	A46022-BM	HOR DRIVE TRANSF	
T2503	CE40381-00A	SIDE PIN TRANSF	
COIL			
L2051	A49468-562	PEAKING COIL	5600μH
L2501	A49468-562	PEAKING COIL	5600μH
L2502	CE41472-001	LINEARITY COIL	
L2503	CJ39598-00A	WIDTH COIL	
L2504	CJ39598-00A	WIDTH COIL	
L2505	CJ30030-060	CHOKE COIL	
L2506	CJ30030-028	HEATER CHOKE	
DIODE			
D2001	RD7.5E	ZENER DIODE	
D2002	V19E-Z	SI. DIODE	
D2041	1SS146-Y	SI. DIODE	
D2051	1SS146-Y	SI. DIODE	
D2052	1SS146-Y	SI. DIODE	
D2053	V19E-Z	SI. DIODE	
D2101	1SS133-Y	SI. DIODE	
D2102	1SS133-Y	SI. DIODE	
D2103	1SS133-Y	SI. DIODE	
D2104	1SS133-Y	SI. DIODE	
D2105	1SS133-Y	SI. DIODE	
D2106	1SS133	SI. DIODE	
D2107	1SS133	SI. DIODE	
D2401	V19E-Z	SI. DIODE	
D2402	05AZ75	ZENER DIODE	
D2403	1SR124-400	SI. DIODE	
D2404	U19E-FK	SI. DIODE	
D2502	V19E-Z	SI. DIODE	
D2503	V19G-Z	SI. DIODE	
D2505	V19E-Z	SI. DIODE	
D2506	V19E-Z	SI. DIODE	
D2507	V19E-Z	SI. DIODE	
D2508	1SS133-Y	SI. DIODE	
D2509	RU4AM-LFK2	SI. DIODE	
D2511	V19E-Z	SI. DIODE	
D2512	V19E-Z	SI. DIODE	
D2513	MA4220 (M) -Y	ZENER DIODE	
D2514	MA4062 (M) -Y	ZENER DIODE	
D2515	1SS133-Y	SI. DIODE	
⚠ D2701	HZ7B2LV1	ZENER DIODE	
D2702	V19E-Z	SI. DIODE	
D2703	1SS133-Y	SI. DIODE	
D2704	1SS133-Y	SI. DIODE	
D2705	1SS146-Y	SI. DIODE	
D2706	1SS133-Y	SI. DIODE	
D2707	1SS133-Y	SI. DIODE	
D2708	1SS133-Y	SI. DIODE	
D2709	1SS133-Y	SI. DIODE	
D2710	MA4100 (M) -Y	ZENER DIODE	

SYMBOL NO.	PART NO.	PART NAME	REMARKS
DIODE			
D2711	1SS133-Y	SI. DIODE	
TRANSISTOR			
Q2001	2SA1013 (O)	SI. TRANSISTOR	
Q2002	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q2041	2SC1505	SI. TRANSISTOR	
Q2051	2SC1505	SI. TRANSISTOR	
Q2101	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2102	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2103	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2104	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2105	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2106	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2107	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2108	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2109	2SC1906-Y	SI. TRANSISTOR	
Q2111	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2112	2SC1906-Y	SI. TRANSISTOR	
Q2113	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q2114	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2115	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2116	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2117	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q2118	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2119	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2121	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2201	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2202	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2203	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2204	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2205	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2206	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2207	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2208	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2209	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2210	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q2401	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q2501	2SC3187	SI. TRANSISTOR	
⚠ Q2502	2SD1555	SI. TRANSISTOR	H. OUT
Q2503	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2504	2SC2555	SI. TRANSISTOR	
Q2505	2SC2555	SI. TRANSISTOR	
Q2506	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2507	2SC1507 (K, L)	SI. TRANSISTOR	
Q2508	2SC2230A	SI. TRANSISTOR	
Q2509	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2551	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2552	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2553	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2554	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2555	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2556	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2557	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2558	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2559	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2701	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2702	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q2703	2SA1015 (Y, GR) Y	SI. TRANSISTOR	

SYMBOL NO.	PART NO.	PART NAME	REMARKS
IC			
IC2101	TC4051BP	I. C.	
IC2102	TC4532BP	I. C.	
IC2201	TC4538BP	I. C. (M)	
IC2202	TC4538BP	I. C. (M)	
IC2203	TC4538BP	I. C. (M)	
IC2204	TC4538BP	I. C. (M)	
IC2205	TC4053BP	I. C.	
IC2206	TC4538BP	I. C. (M)	
IC2207	TC4538BP	I. C. (M)	
IC2401	AN5521	I. C. (M)	
IC2501	HA11423	I. C.	
IC2502	TA78012AP	I. C.	
IC2551	TC4066BP	I. C.	
IC2552	AN5560	I. C.	
IC2553	TC4538BP	I. C. (M)	
OTHERS			
⚠ CP2001	ICP-F50	IC PROTECTOR	
⚠ FR2530	QRZ0055-4R7M	F R	4. 7 Ω 1/2W J
RY2501	CESK006-001	RELAY	
SW2501	QSP2C22-C01	PUSH SWITCH	H. FREE RUN SW

■ FX-4008A (CONTROL/TALLY/SWITCH P.C.B. ASS'Y)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE RESISTOR			
R4116	QVPC601-502H	VR (UNDER R CUT OFF)	5kΩ B
R4117	QVPC601-502H	VR (UNDER G CUT OFF)	5kΩ B
R4118	QVPC601-502H	VR (UNDER B CUT OFF)	5kΩ B
R4120	QVPC601-502H	VR (NORMAL R CUT OFF)	5kΩ B
R4121	QVPC601-502H	VR (NORMAL G CUT OFF)	5kΩ B
R4122	QVPC601-502H	VR (NORMAL B CUT OFF)	5kΩ B
R4129	QVPC601-102H	VR (R DRIVE)	1kΩ B
R4132	QVPC601-102H	VR (G DRIVE)	1kΩ B
R4135	QVPC601-102H	VR (B DRIVE)	1kΩ B
R4202	QVPC601-103H	VR (SUB CONT.)	10kΩ B
R4204	QVCA029-CB14M	VR (CONTRAST)	10kΩ B
R4207	QVPC601-103H	VR (SUB BRIGHT)	10kΩ B
R4209	QVCA029-CB14M	VR (BRIGHT)	10kΩ B
R4212	QVPC601-103H	VR (SUB APERTURE)	10kΩ B
R4214	QVCA029-CB14M	VR (APERTURE)	10kΩ B
R4217	QVPC601-103H	VR (SUB CHROMA)	10kΩ B
R4219	QVCA029-CB14M	VR (CHROMA)	10kΩ B
R4222	QVPC601-103H	VR (SUB PHASE)	10kΩ B
R4224	QVCA029-CB14M	VR (PHASE)	10kΩ B
R4226	QVCA028-CB53M	VR (V. HOLD)	5kΩ B
R4227	QVPC601-103H	VR (H. POSI.)	10kΩ B
R4230	QVPC609-104H	VR (COMP LEVEL)	100kΩ B
DIODE			
D4101	GL-5PG23	L E D	POWER IND.
D4102	LD-701DU	L. E. D.	TALLY IND.
D4103	1SS133-Y	SI. DIODE	
D4105	1SS133-Y	SI. DIODE	
D4106	1SS133-Y	SI. DIODE	
D4107	LD-701DU	L. E. D.	TALLY IND.
D4108	RD12E	ZENER DIODE	
TRANSISTOR			
Q4101	2SC1815 (O, Y) -L	SI. TRANSISTOR	
Q4102	2SC1815 (O, Y) -L	SI. TRANSISTOR	
Q4103	2SC1815 (O, Y) -L	SI. TRANSISTOR	
Q4104	2SC1815 (O, Y) -L	SI. TRANSISTOR	
IC			
IC4101	AN5860	I. C. (M)	
OTHERS			
S4101	QST2631-C02	PUSH SWITCH	VIDEO A, B, Y/C358
S4102	QST2831-C01	PUSH SWITCH	SYNC, SCAN, AFC
S4103	QSS1F22-C03	SLIDE SWITCH	COMP LEVEL
S4104	QSS1F22-C03	SLIDE SWITCH	AFC
S4105	QSS1F22-C03	SLIDE SWITCH	MATRIX
S4106	QSS1F22-C03	SLIDE SWITCH	NOTCH
S4107	QSS1F22-C03	SLIDE SWITCH	SERVICE SW
S4108	QSS1F22-C03	SLIDE SWITCH	TALLY
S4109	QST3361-C01	PUSH SWITCH	PAL/SECAM/NTSC
TH4201	ERT-D2ZHL103S	THERMISTOR	

■ FX-6006A (INPUT P.C.B. ASS'Y)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
RESISTOR			
R6101	QRV142D-75R0	MF R	75 Ω 1/4W±0. 5%
R6111	QRV142D-75R0	MF R	75 Ω 1/4W±0. 5%
R6117	QRV142D-75R0	MF R	75 Ω 1/4W±0. 5%
R6123	QRV142D-75R0	MF R	75 Ω 1/4W±0. 5%
R6129	QRV142D-75R0	MF R	75 Ω 1/4W±0. 5%
R6135	QRV142D-75R0	MF R	75 Ω 1/4W±0. 5%
R6146	QRV142D-75R0	MF R	75 Ω 1/4W±0. 5%
R6152	QRV142D-75R0	MF R	75 Ω 1/4W±0. 5%
R6158	QRV142D-1500	MF R	150 Ω 1/4W±0. 5%
R6159	QRV142D-1500	MF R	150 Ω 1/4W±0. 5%
R6165	QRV142D-75R0	MF R	75 Ω 1/4W±0. 5%
R6170	QRV142D-75R0	MF R	75 Ω 1/4W±0. 5%
CAPACITOR			
C6144	QCT25CH-151	C CAP.	150pF 50V J
DIODE			
D6101	1SS133-Y	SI. DIODE	
D6102	1SS133-Y	SI. DIODE	
D6103	1SS133-Y	SI. DIODE	
D6104	1SS133-Y	SI. DIODE	
D6105	1SS133-Y	SI. DIODE	
D6106	1SS133-Y	SI. DIODE	
D6107	1SS133-Y	SI. DIODE	
D6108	1SS133-Y	SI. DIODE	
D6109	1SS133-Y	SI. DIODE	
D6110	1SS133-Y	SI. DIODE	
D6111	1SS133-Y	SI. DIODE	
D6112	1SS133-Y	SI. DIODE	
D6113	1SS133-Y	SI. DIODE	
D6114	1SS133-Y	SI. DIODE	
D6115	1SS133-Y	SI. DIODE	
D6116	1SS133	SI. DIODE	
D6117	1SS133-Y	SI. DIODE	
D6118	1SS133-Y	SI. DIODE	
D6119	1SS133-Y	SI. DIODE	
D6120	1SS133-Y	SI. DIODE	
D6121	1SS133-Y	SI. DIODE	
D6122	1SS133-Y	SI. DIODE	
D6123	1SS133-Y	SI. DIODE	
D6124	1SS133-Y	SI. DIODE	
D6125	1SS133-Y	SI. DIODE	
D6126	1SS133-Y	SI. DIODE	
TRANSISTOR			
Q6101	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6102	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6103	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6104	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6105	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6106	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6107	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6108	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6110	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6111	2SC1815 (O, Y)	SI. TRANSISTOR	
Q6112	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6113	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6114	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6115	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6116	2SC1815 (O, Y) -Y	SI. TRANSISTOR	

SYMBOL NO.	PART NO.	PART NAME	REMARKS
TRANSISTOR			
Q6117	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6118	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q6119	2SC1815 (O, Y)	SI. TRANSISTOR	
Q6120	2SC1472 (K)	SI. TRANSISTOR	
IC			
IC6101	LA7016	I. C.	
IC6102	HD74LS86P	I. C.	
OTHERS			
DL6101	CE41042-002	DELAY LINE	
J6102	CH40326-009SN	D SUB 9S	
S6101	QSS1C22-C02	SLIDE SWITCH	TERMINATION SW
S6102	QSS1C22-C02	SLIDE SWITCH	〃
S6103	QSS1C22-C02	SLIDE SWITCH	〃
S6104	QSS1C22-C02	SLIDE SWITCH	〃
S6105	QSS1C22-C02	SLIDE SWITCH	〃
S6106	QSS1C22-C02	SLIDE SWITCH	〃
S6107	QSS1C22-C02	SLIDE SWITCH	〃
S6108	QSS1C22-C02	SLIDE SWITCH	〃
S6109	QSS1C22-C02	SLIDE SWITCH	〃
S6110	QSS1C22-C02	SLIDE SWITCH	TTL MODE SW
S6111	QSS1C23-C02	SLIDE SWITCH	Vf SW

■ FX-8006A (DECODER P.C.B. ASS'Y)

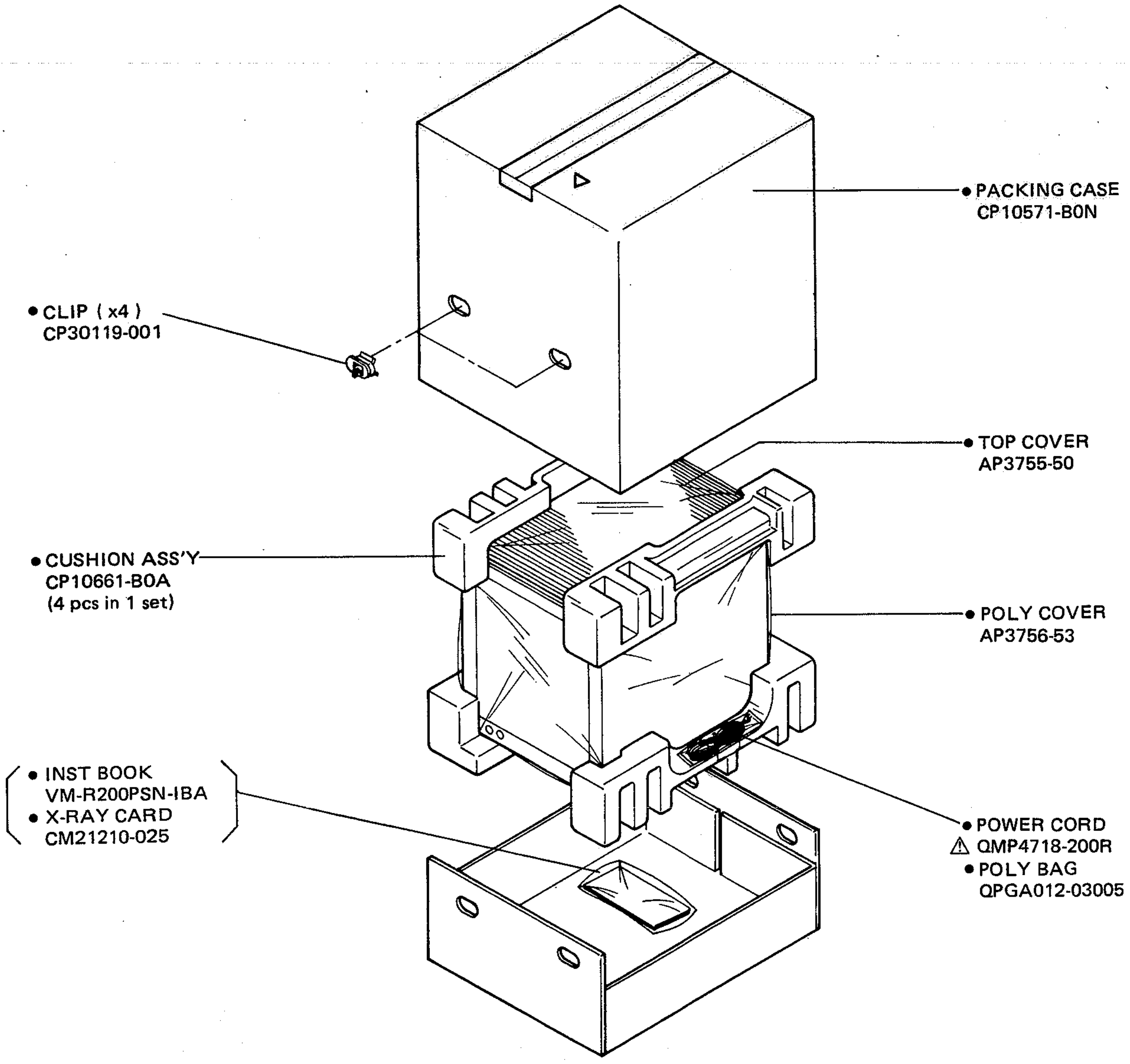
SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE RESISTOR			
R8106	QVPC609-202H	VR (COMB 1)	2kΩ B
R8117	QVPC609-501H	VR (COMB 2)	500Ω B
R8120	QVPC609-202H	VR (COMB PHASE)	2kΩ B
R8142	QVPC609-102H	VR (N. SUB CONT)	1kΩ B
R8167	QVPC609-203H	VR (N. SUB COLOR)	20kΩ B
R8169	QVPC609-203H	VR (SUB TINT)	20kΩ B
R8218	QVPC609-102H	VR (P/S SUB CONT)	1kΩ B
R8265	QVPC609-203H	VR (S SUB COLOR)	20kΩ B
R8307	QVPC609-202H	VR (DL LEVEL)	2kΩ B
R8310	QVPC609-203H	VR (P SUB COLOR)	20kΩ B
R8318	QVPC609-104H	VR (CRAWLING)	100kΩ B
RESISTOR			
R8137	QRV141F-4220AY	MF R	422 Ω 1/4W F
CAPACITOR			
C8133	QEN61AM-476Z	BP E CAP.	47μF 10V M
C8134	QEN61AM-476Z	BP E CAP.	47μF 10V M
C8135	QFV81HJ-224M	TF CAP.	0. 22μF 50V J
C8157	QEN61AM-476Z	BP E CAP.	47μF 10V M
C8162	QEN61AM-476Z	BP E CAP.	47μF 10V M
C8166	QFV71HJ-224MZ	TF CAP.	0. 22μF 50V J
C8167	QFV71HJ-473MZ	TF CAP.	0. 047μF 50V J
C8171	QAT3110-300A	TRIMMER CAP	
C8175	QFV71HJ-224MZ	TF CAP.	0. 22μF 50V J
C8177	QFV81HJ-224M	TF CAP.	0. 22μF 50V J
C8178	QFV81HJ-224M	TF CAP.	0. 22μF 50V J
C8201	QEK41AM-476M	E CAP.	47μF 10V M
C8207	QEN61AM-476Z	BP E CAP.	47μF 10V M
C8208	QEN61AM-476Z	BP E CAP.	47μF 10V M
C8209	QFV81HJ-224M	TF CAP.	0. 22μF 50V J
C8210	QFV81HJ-224M	TF CAP.	0. 22μF 50V J
C8251	QCT25UJ-330Z	C CAP.	33pF 50V J
C8257	QFV81HJ-224M	TF CAP.	0. 22μF 50V J
C8262	QCT25UJ-330Z	C CAP.	33pF 50V J
C8281	QFV81HJ-474M	TF CAP.	0. 47μF 50V J
C8285	QFV81HJ-224M	TF CAP.	0. 22μF 50V J
C8311	QEN61CM-106Z	BP E CAP.	10μF 16V M
C8330	QEN61AM-476Z	BP E CAP.	47μF 10V M
C8331	QEN61AM-476Z	BP E CAP.	47μF 10V M
C8340	QAT3110-300A	TRIMMER CAP	20pF
TRANSFORMER			
T8101	CE41072-001	B. PASS TRANSF.	
T8102	CE40176-001	DL P TRANSF.	
T8201	CE41113-001	DISCRI TRANSF.	
T8202	CE41111-001	CW TRANSF	
T8203	CE40496-001	BELL TRANSF	
T8205	CE41113-001	DISCRI TRANSF.	
T8301	CE40394-001	B P TRANSF	
COIL			
L8101	A76186-120	PEAKING COIL	120μH
L8102	A76186-15Z	PEAKING COIL	15μH
L8103	A76186-5. 6Z	PEAKING COIL	5. 6μH
L8130	A76186-27	PEAKING COIL	27μH
L8155	A76186-56Z	PEAKING COIL	56μH
L8160	A76186-56Z	PEAKING COIL	56μH
L8165	A76186-120Z	PEAKING COIL	120μH
L8166	A76186-180Z	PEAKING COIL	180μH
L8202	A76186-8. 22	PEAKING COIL	8. 2μH

SYMBOL NO.	PART NO.	PART NAME	REMARKS
COIL			
L8203	A76186-27Z	PEAKING COIL	27μH
L8204	A76186-1000	PEAKING COIL	1mH
L8245	A76186-15Z	PEAKING COIL	15μH
L8246	A76186-8.2Z	PEAKING COIL	8.2μH
L8248	A76186-15Z	PEAKING COIL	15μH
L8301	A76186-39Z	PEAKING COIL	39μH
L8302	A76186-4.7Z	PEAKING COIL	4.7μH
L8303	A76186-4.7Z	PEAKING COIL	4.7μH
L8304	A76186-4.7Z	PEAKING COIL	4.7μH
L8305	A76186-56Z	PEAKING COIL	56μH
DIODE			
D8101	1SS133-Y	SI. DIODE	
D8102	1SS133-Y	SI. DIODE	
D8130	1SS133-Y	SI. DIODE	
D8165	1SS133-Y	SI. DIODE	
D8166	1SS133-Y	SI. DIODE	
D8167	1SS133-Y	SI. DIODE	
D8201	1SS133-Y	SI. DIODE	
D8205	1SS133-Y	SI. DIODE	
D8206	1SS133-Y	SI. DIODE	
D8207	1SS133-Y	SI. DIODE	
D8208	RD8.2E (B3)	ZENER DIODE	
D8209	1SS133-Y	SI. DIODE	
D8210	1SS133-Y	SI. DIODE	
D8211	1SS133-Y	SI. DIODE	
D8212	1SS133-Y	SI. DIODE	
D8213	1SS133-Y	SI. DIODE	
D8214	1SS133-Y	SI. DIODE	
D8215	1SS133	SI. DIODE	
D8245	1SS133-Y	SI. DIODE	
D8246	1SS133	SI. DIODE	
TRANSISTOR			
Q8101	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8102	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8103	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8104	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8105	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q8106	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q8107	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8108	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8130	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8131	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q8132	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8133	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q8134	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q8150	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q8155	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8160	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8165	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q8201	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8205	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8206	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q8207	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8208	2SA1015 (O, Y) -Y	SI. TRANSISTOR	
Q8209	2SC1815 (Y, GR)	SI. TRANSISTOR	
Q8210	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q8211	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8213	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8214	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
TRANSISTOR			
Q8215	2SA1015 (Y, GR)	SI. TRANSISTOR	
Q8230	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8231	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8232	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8245	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q8246	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q8247	2SC1815 (Y, GR)	SI. TRANSISTOR	
Q8248	2SA1015 (O, Y)	SI. TRANSISTOR	
Q8249	2SC1815 (Y, GR)	SI. TRANSISTOR	
Q8250	2SC1815 (Y, GR)	SI. TRANSISTOR	
Q8251	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q8301	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8302	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8330	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8331	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
Q8332	2SC1815 (O, Y) -Y	SI. TRANSISTOR	
IC			
IC8101	AN5322K	I. C. (M)	
IC8102	TC4066BP	I. C.	
IC8201	TC4066BP	I. C.	
IC8202	AN5635N	I. C.	
IC8203	AN5625N	I. C.	
IC8205	TC4538BP	I. C. (M)	
OTHERS			
DL8101	CE40410-001	1H DELAY LINE	
DL8102	CE40959-001	DELAY LINE	
DL8103	CE41422-001	DELAY LINE	
DL8201	CE41353-001	DELAY LINE	
DL8202	CE41593-001	DELAY LINE	
DL8203	CE41260-001	1H DELAY LINE	
⚠ FR8268	QRZ0054-180M	F R	18 Ω 1/4W J
X8101	A76351-D	CRYSTAL	
X8201	A76090	CRYSTAL	

■ FX-9005A (POWER/LINE FILTER P.C.B. ASS'Y)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE RESISTOR			
R9921	QVPE804-503H	VR (B1 ADJ.)	50kΩ B
RESISTOR			
R9902	QRF204K-5R6	UNF R	5.6 Ω 20W K
R9918	QRG019J-221S	OM R	220 Ω 1W J
R9919	QRG029J-473A	OM R	47kΩ 2W J
R9920	QRG029J-470A	OM R	47 Ω 2W J
R9924	QRM055K-R22	MP R	0.22 Ω 5W K
R9925	QRX019J-3R9S	MF R	3.9 Ω 1W J
R9931	QRG029J-333A	OM R	33kΩ 2W J
R9932	QRG029J-333A	OM R	33kΩ 2W J
R9933	QRX029J-1R8A	MF R	1.8 Ω 2W J
R9934	QRD149J-102S	C R	1kΩ 1/4W J
R9935	QRD149J-390S	C R	39 Ω 1/4W J
R9936	QRD149J-221S	C R	220 Ω 1/4W J
R9938	QRG039J-390	OM R	39 Ω 3W J
R9939	QRG029J-820	OM R	82 Ω 2W J
⚠ R9951	QRD129J-474S	C R	470kΩ 1/2W J
CAPACITOR			
⚠ C9901	QFZ9022-224M	MF CAP.	0.22μFAC250V M
⚠ C9902	QFZ9022-224M	MF CAP.	0.22μFAC250V M
⚠ C9905	QCZ9034-472A	C CAP.	4700pFAC250V P
⚠ C9906	QCZ9034-472A	C CAP.	4700pFAC250V P
C9907	QCZ9034-472A	C CAP.	4700pFAC250V P
C9910	QEZ0111-337R	E CAP.	330μF 400V M
C9915	QFV71HJ-474MZ	TF CAP.	0.47μF 50V J
C9917	QCZ0122-152U	C CAP.	1500pF 2kV K
C9921	QCZ0122-391U	C CAP.	390pF 2kV K
⚠ C9923	QCZ9036-102M	C CAP.	1000pFAC400V K
⚠ C9924	QCZ9036-471M	C CAP.	470pFAC400V K
⚠ C9926	QCZ9036-102M	C CAP.	1000pFAC400V K
⚠ C9927	QCZ9036-471M	C CAP.	470pFAC400V K
⚠ C9928	QCZ9033-472A	C CAP.	4700pFAC400V M
⚠ C9929	QCZ9033-472A	C CAP.	4700pFAC400V M
C9931	QCZ0122-471A	C CAP.	470pF 2KV K
C9932	QEH52CM-107M	E CAP.	100μF 160V M
C9933	QEH52CM-336M	E CAP.	33μF 160V M
⚠ C9955	QFZ9022-224M	MF CAP.	0.22μFAC250V M
⚠ C9956	QFZ9022-104M	MF CAP.	0.1μFAC250V M
⚠ C9957	QFZ9022-224M	MF CAP.	0.22μFAC250V M
⚠ C9958	QFZ9022-224M	MF CAP.	0.22μFAC250V M
C9960	QCZ0122-152U	C CAP.	1500pF 2kV K
TRANSFORMER			
⚠ T9901	CE41100-00B	SW TRANSF	
⚠ T9902	CE41059-00B	DRIVE TRANSF.	
DIODE			
D9901	LB-156-LFB	DIODE BRIDGE	
D9902	EU2A-Z	SI. DIODE	
D9903	RU1C-LFA1	SI. DIODE	
D9904	EU2A-Z	SI. DIODE	
D9905	W06-B-Z	SI. DIODE	
D9931	RU4B-LFK2	SI. DIODE	
D9932	V19E-Z	SI. DIODE	
TRANSISTOR			
Q9901	2SC2655 (Y)	SI. TRANSISTOR	
Q9902	2SA966	SI. TRANSISTOR	
IC			
IC9901	STR54041S	I. C.	
⚠ IC9902	STR30110-A	I. C. (M)	
OTHERS			
⚠ F9901	QMF51E2-3R15S	FUSE	3.15A
⚠ F9902	QMF51E2-2R0S	FUSE	2A
⚠ LF9901	CE40578-00A	LINE FILTER	
⚠ LF9952	CE40578-00A	LINE FILTER	
⚠ R9917	QRZ0054-100M	FR	10 Ω 1/4W J
⚠ TH9901	A76038-T	POSISTOR	
OTHERS			
	CM21288-C01	TERMINAL PLATE	
	QSS1C22-C02	SLIDE SWITCH	

■ PACKING DIAGRAM


● PACKING CASE
CP10571-B0N
● CLIP (x4)
CP30119-001
● TOP COVER
AP3755-50
● CUSHION ASS'Y
CP10661-B0A
(4 pcs in 1 set)
● POLY COVER
AP3756-53
● INST BOOK
VM-R200PSN-IBA
● X-RAY CARD
CM21210-025
● POWER CORD
⚠ QMP4718-200R
● POLY BAG
QPGA012-03005

■ KNOB POSITION FOR SHIPMENT

KNOB	POSITION	KNOB	POSITION
POWER	OFF	APERTURE	Click position
SCAN	WIDE	CONTRAST	〃
RGB	ON	BRIGHT	〃
COLOUR/MONO	COLOUR	CHROMA	〃
AFC	NOR	PHASE	〃
PULSE CROSS	OFF	V. HOLD	Best point of Interlace
INPUT	A		
SYNC	INT position	SYSTEM	PAL

JVC

VICTOR COMPANY OF JAPAN, LIMITED
TELEVISION RECEIVER DIVISION 1106 Iwai-city, Ibaraki-prefecture, 306-06, Japan

Printed in Ja
8805 NPT/V
(VM-R200P

CAUTION

- The parts marked ⚠ are very important for the safety. When replacing these parts, be sure to use specified ones to secure the safety and performance.
- The parts which do not have the drawing in this Parts List, P.C. Board Ass'y and the Part No. columns of which are filled with lines —— , will not be supplied.
- As a rule, the resistors and capacitors which are indicated as shown in (NOTE 2) "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" are not shown in the list of the parts on the board.
  When ordering the service parts, confirm the resistance/rated power, capacitance/rated voltage, and type of the parts, then order by the part No. indicated according to (NOTE 2).

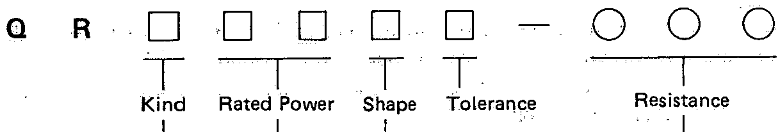
(NOTE 1) ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Aluminum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
± 1 %	± 2 %	± 5 %	± 10 %	± 20 %	± 30 %	+ 30 % - 10	+ 50 % - 10	+ 80 % - 20	+ 100 % - 0

(NOTE 2) HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS

■ RESISTOR


Q R □ □ □ □ □ — ○ ○ ○
Kind
Rated Power
Shape
Tolerance
Resistance

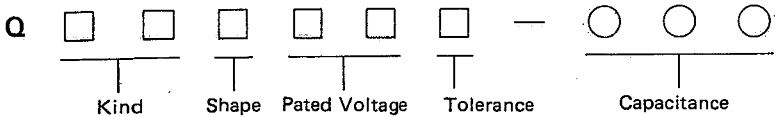
Symbol	Part Name
C	COMP. R
D	C R
S	CH MG R

Symbol	Rated Power
0 1	1 W
1 2	1/2 W
1 4	1/4 W
1 6	1/6 W
1 8	1/8 W
A 0	1/10W

Symbol	Shape
1	Straight lead
8	Chip

Indicate with first two-figure expressed by Ω and following 0.
Please note that, in case of resistance less than 10 Ω, a letter "R" will be effective as point.
Ex. • 2.2 Ω → 2R2
• 470 Ω = 47 x 10¹ → 471
• 150 kΩ = 15 x 10⁴ → 154

■ CAPACITOR


Q □ □ □ □ □ □ — ○ ○ ○
Kind
Shape
Pated Voltage
Tolerance
Capacitance

Symbol	Part Name
C S	C CAP.
C S	CH C CAP.
E T	E CAP.
F M	M CAP.

6 Figure \ 5 Figure	0	1	2
A		10 V	100 V
C		16 V	160 V
D			200 V
E		25 V	250 V
H		50 V	500 V
J	6.3 V	63 V	
V		35 V	

Indicatè with first two-figure expressed by pF and following 0.
Please note that, in case of capacitance less than 10 pF, a letter "R" will be effective as point.
Ex. • 5 pF = → 5R0
• 1000 pF = 10 x 10² → 102
• 47 μF = 47 x 10⁶ → 476

Symbol	Shape
1	Straight lead
1	Leads in the same direction
8	Chip
A	Leads in the same direction (Compact part)

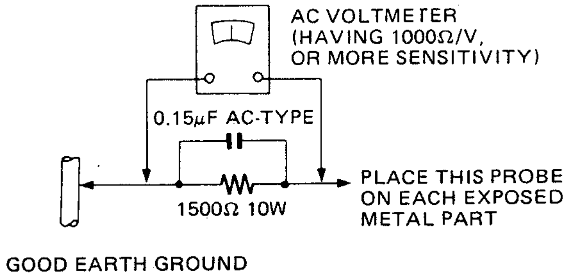
SAFETY PRECAUTION

1. The design of this product contains special hardware, many circuits and components specially for safety purposes.
   For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual many create shock, fire, or other hazards.
4. **Use isolation transformer when hot chassis.**
   The chassis and any sub-chassis contrained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.
5. **Don't short between the LIVE side ground and NEUTRAL side grounding or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⊥) side GND, the NEUTRAL (⏚) side GND and EARTH (⊜) side GND.
   Don't short between the LIVE side GND and NEUTRAL side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.
6. If any repair has been made to the chassis, it is recommended that the B_1 setting should be checked or adjusted (See ADJUSTMENT OF B_1 POWER SUPPLY).
7. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approvided by the manufacturer of the complete product.
8. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a l0kΩ 2W resistor to the anode button.
9. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
10. **Isolation Check**
    (Safety for Electrical Shock Hazard)
    After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1,100V AC (r.m.s.) for a period of one second.
(. . . . . Withstand a voltage of 1,100V AC (r.m.s.) to an appliance rated up to 120V, and 3,000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

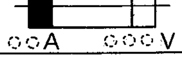
- **Alternate Check Method**
  Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.).
  Measure the AC voltage across the resistor with the AC voltmeter.
  Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).



11. **High voltage hold down circuit check.**
    After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.
    See item **"How to check the high voltage hold down circuit".**

- **ONLY CANADA**

This mark shows a fast operating fuse, the letters indicated below show the rating.



PURITY, CONVERGENCE AND WHITE BALANCE

*** The locations of SERVICE SWITCH, SCREEN VR, CUT-OFF VR and DRIVE VR are described in the ALIGNMENT LOCATION of SERVICE ADJUSTMENT or the SCHEMATIC DIAGRAM.**

PICTURE TUBE

The picture tube is a precision in-line gun type. For this picture tube, dynamic convergence is carried out by a precision deflection yoke which eliminated the use of convergence yoke and convergence circuit. The adjustment of picture tube is therefore made easier as only the adjustment of static convergence by using a magnetic is enough. The deflection yoke and purity/convergency magnets assembly has been set at the factory and requires no field adjustments.
However, should the assembly be accidentally jarred or tampered with, some or all adjustments may be necessary.

COLOR PURITY & VERTICAL CENTER

Loosen yoke retaining screw (Fig. B-1). With a sharp knife cut between the picture tube and the wedge. Remove wedges completely and clean off dried adhesive from the picture tube. PAINT is used to lock the tabs of the purity/convergence magnet assembly in place (Fig. B-1). The paint must be removed with the end of a screwdriver before any adjustments are attempted.

(As to models equipped with a magnet locking ring, beforhand loosen it.)

1. Select no signal UHF channel. (or Display a monochrome pattern)
2. Let the purity tabs come in line horizontally as is shown in Fig. B-2. A long tab should be in the same direction as the other short tab.
3. Move the yoke slowly backward.
4. Turn the GREEN CUT-OFF VR to maximum and the RED and BLUE CUT-OFF VRs to minimum. Then adjust the SCREEN VR so that the green band can be seen best. (Fig. B-3.)
5. Rotate the two tabs in the opposite directions and with them kept at an angle, together in either direction so that the green band is centered on the picture tube.
6. Check the vertical center position by displaying a horizontal line. (Select the CUT-OFF SERVICE SWITCH from N to S and a HORIZONTAL LINE will appear.) Unless correct, bring it to the nearest center by rotating the two tabs, kept at an angle, together in either direction. (Fig. B-4)
7. Repeat steps 5 and 6 alternately until the green band and the vertical center come to the center.
8. Move the yoke slowly towards the bell of the tube so that the whole surface of the picture tube is filled with a green pure raster.
9. Turning RED or BLUE CUT-OFF VR to maximum and GREEN CUT-OFF VR to minimum, make sure of a red or blue pure raster.
10. Secure yoke retaining screw (do not install wedges at this time).

(As to models equipped with a magnet locking ring, secure it and keep six magnets from moving even if it is touched slightly.)

(EXAMPLE)

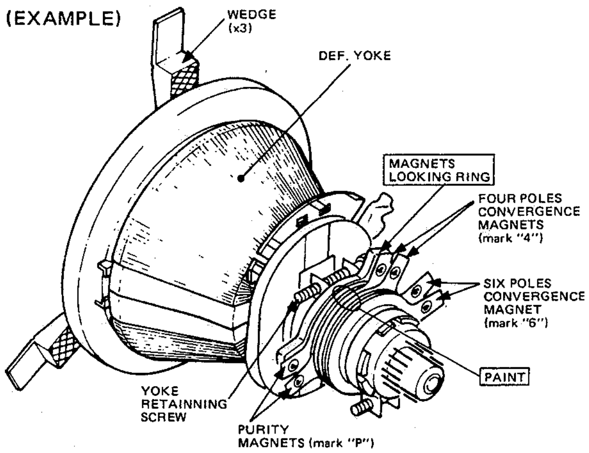
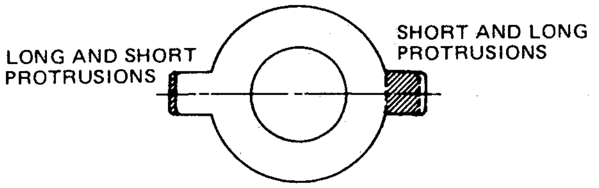

WEDGE (x3)
DEF. YOKE
MAGNETS LOOKING RING
FOUR POLES CONVERGENCE MAGNETS (mark "4")
SIX POLES CONVERGENCE MAGNET (mark "6")
PAINT
YOKE RETAINNING SCREW
PURITY MAGNETS (mark "P")

Fig. B-1

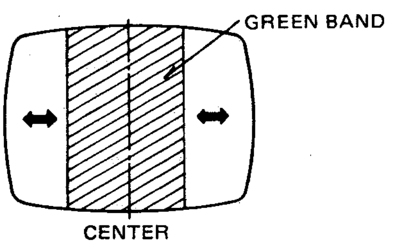
(REAR VIEW)



Let the protrusions come in line

Fig. B-2

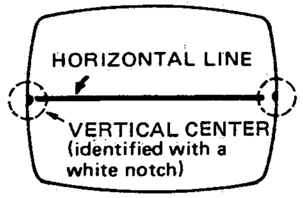
(FRONT VIEW)



Bring the green band to the center.

Fig. B-3

(FRONT VIEW)



Bring the horizontal line nearest to the white notches shown in the dotted circles.

Fig. B-4

STATIC CONVERGENCE & DYNAMIC CONVERGENCE

1. Connect a crosshatch generator to the input terminals and adjust BRIGHTNESS and CONTRAST control for a distinct pattern.
2. Adjust the convergence around the edges of the picture tube by tilting the yoke, up-down and left-right, and temporarily install one wedge at the top of the yoke. (Fig. B-7, 8, 9)
3. Rotate the front pair of tabs (four pole convergence magnet) as a unit to minimize the separation of the red and blue lines around the center of the screen. To adjust the convergence of red and blue, vary the angle between the tabs. (Fig. B-5)
4. Rotate the rear pair of tabs (six pole convergence magnets) as a unit to minimize the separation of the magenta (R/B) and green lines. (Fig. B-6)
5. Adjust the spacing of the rear tabs to converge the magenta and green lines.
6. Apply paint to fix six magnets

   (As to models equipped with a magnet locking ring, tighten it.)
7. Remove the wedge installed temporarily on the yoke.
8. Tilting the angle of the yoke up, down and sideways, and adjust the yoke so as to obtain the circumference convergence. (Fig. B-8, 9)
9. Insert wedges to the position as shown in Fig. B-10 to obtain the best circumference convergence.
10. Wedge has a backing of double sided adhesive tape.

    Therefore, tear off one side of adhesive tape, and fix the wedges.
11. White balance adjustment (Black & White tracking) can now be performed.

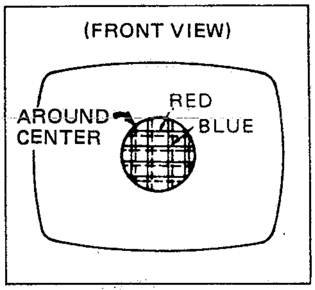

(FRONT VIEW)
AROUND CENTER
RED
BLUE

Fig. B-5

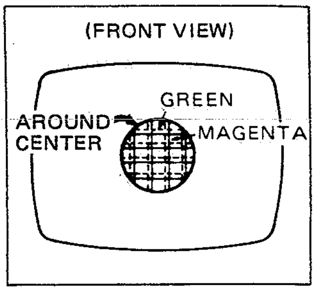

(FRONT VIEW)
AROUND CENTER
GREEN
MAGENTA

Fig. B-6

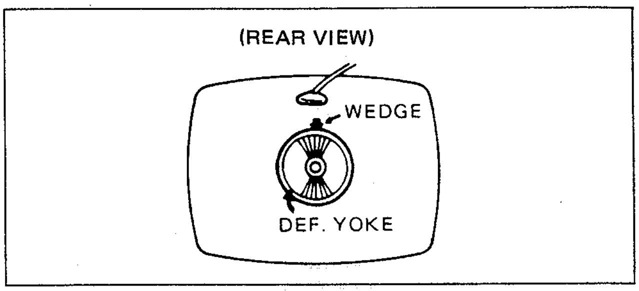
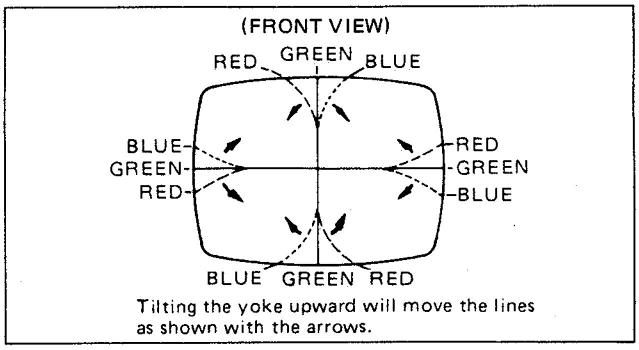
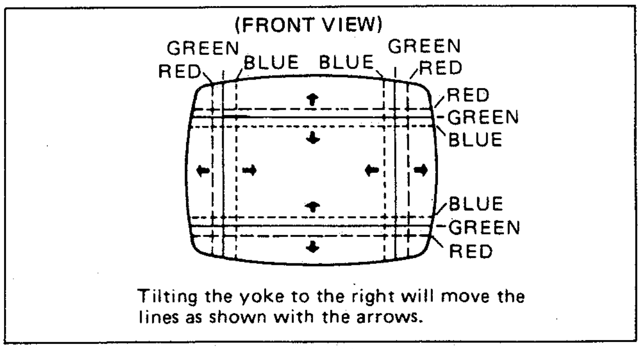

(REAR VIEW)
WEDGE
DEF. YOKE

Fig. B-7


(FRONT VIEW)
RED
GREEN
BLUE
BLUE
GREEN
RED
RED
GREEN
BLUE
BLUE
GREEN
RED

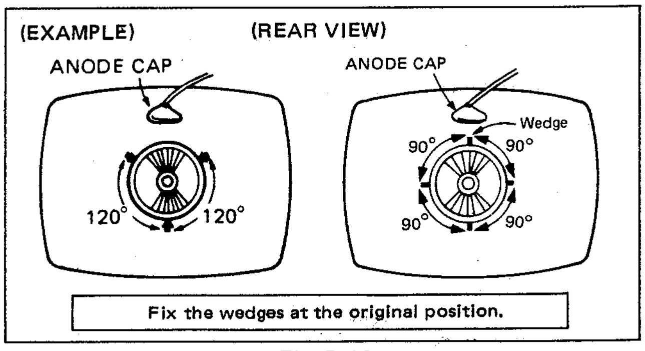
Tilting the yoke upward will move the lines as shown with the arrows.

Fig. B-8


(FRONT VIEW)
GREEN
RED
BLUE
BLUE
GREEN
RED
RED
GREEN
BLUE
BLUE
GREEN
RED

Tilting the yoke to the right will move the lines as shown with the arrows.

Fig. B-9


(EXAMPLE)
(REAR VIEW)
ANODE CAP
120°
120°
ANODE CAP
Wedge
90°
90°
90°
90°

Fix the wedges at the original position.

Fig. B-10

WHITE BALANCE ADJUSTMENT
(Black and White Tracking)

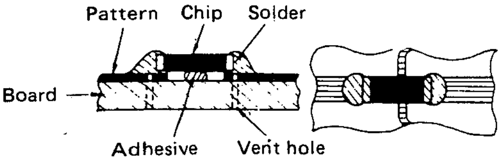
1. Display a monochrome pattern.
2. Set the RED and GREEN DRIVE VRs for their mechanical center.
3. Turn the RED, GREEN and BLUE CUT-OFF VRs and the SCREEN VR fully counterclockwise.
4. Display a horizontal line. (Select the CUT-OFF SERVICE SWITCH from N to S and a HORIZONTAL LINE will appear.)
5. Turn SCREEN VR slowly clockwise until a very faint horizontal line appears.
6. Turn the CUT-OFF VR of the color which has appeared first, clockwise by about 10° and then adjust the SCREEN VR again so that the color may shine faintly.
7. Turn the other color CUT-OFF VRs slowly clockwise until a reasonable white line appears.
8. Return the monochrome pattern. (When returning a monochrome pattern select the CUT-OFF SERVICE SWITCH from S to N and a monochrome pattern will appear.)
9. Adjust the RED and GREEN DRIVE VRs for best white highlights.

REPLACEMENT OF THE CHIP

- * **CHIPS ARE NOT USED ON CERTAIN MODELS. REFER TO THE DESCRIPTIONS ON THIS PAGE ONLY WHEN WORKING ON MODELS ON WHICH CHIPS ARE EMPLOYED.**
- * Replacement of the chip on printed circuit board can be performed easily as follows.

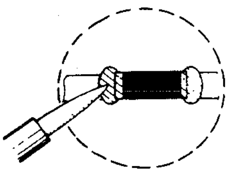
1 When mounted

[Resistor · Capacitor]

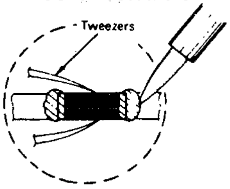


2 Removal of the chip

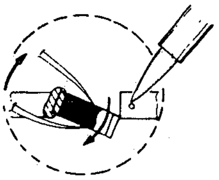
(1) Remove either of the soldered contacts.



(2) Hold the chip with tweezers and remove the other contact.



(3) Work the chip free from the adhesive with tweezers.

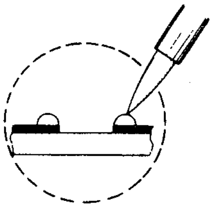


3 Preheating and soldering of chip pieces

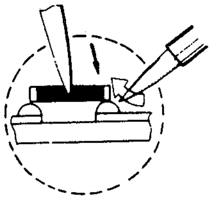
Be sure to preheat chip pieces (except the transistor) especially the capacitor before soldering with hot air, about 150°C (hair dryer or such can be used) for about 2 minutes. Then, immediately solder with an iron of about 30W.

4 Replacing the chip pieces

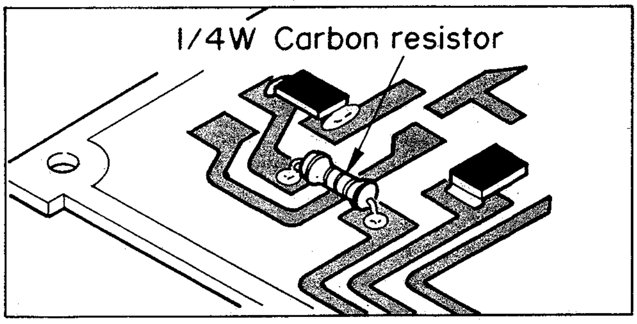
(1) Apply the solder to the board first.



(2) Hold the chip with tweezers and solder it in place, hold the iron at a 45° angle when soldering.

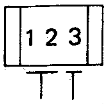


- Discrete parts can be substitutionally mounted as shown in the figure on the right.
  Mounting is also possible by passing the wires from the board front side (parts side) through the chip soldering hole (vent hole of registration part).
  Substitute parts are as follows.
  - Chip Metal Glaze Resistor
    → Carbon Resistor 1/4W ±5%
  - Chip Ceramic Capacitor
    → Ceramic Capacitor 50V ±5%



- **Decoding of chip parts constant terms**

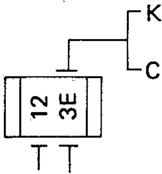
< Chip Metal Glaze Resistor >



$12 \times 10^3 = 12000\Omega$
$= 12k\Omega$

< Chip Ceramic Capacitor >

K, M, Z, P .....Tolerance of ordinary type
C, P, R, S, T, U ..Temperature coefficient of temperature compensation type



$12 \times 10^3 = 12000pF$
$= 0.012\mu F$

JVC

SERVICE MANUAL

COLOUR VIDEO MONITOR

VM-R200PSN

Supplementary

Some changes have been made in the service manual for VM-R200PSN. Kindly use this manual in combination with the Service Manual No.50058 issued in May.1988.

Design & specification subject to change without notice.

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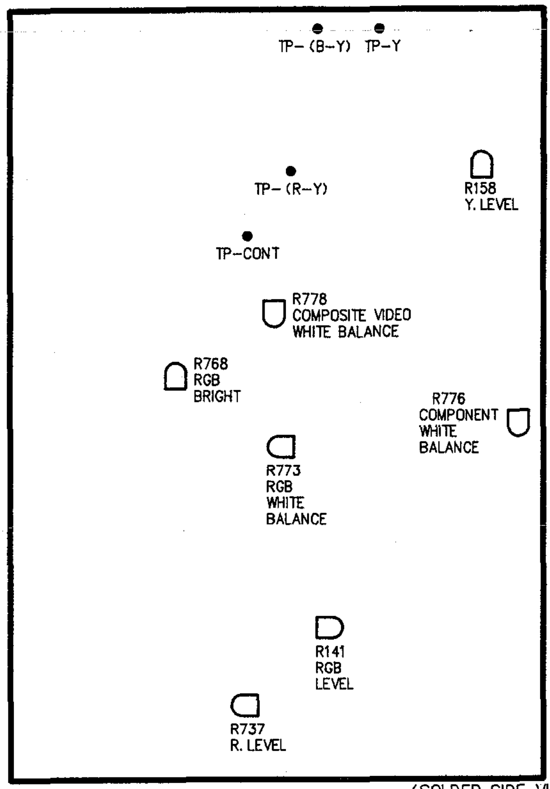
No.50058B
Feb.1991

ALIGNMENT LOCATION

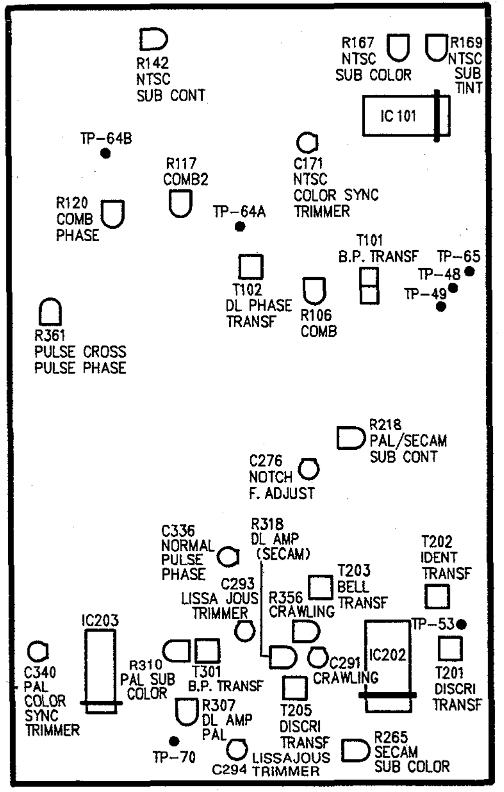
TOP

FX-1009A (SIGNAL P.C.B.)


TP-(B-Y)
TP-Y
TP-(R-Y)
R158
Y. LEVEL
TP-CONT
R778
COMPOSITE VIDEO
WHITE BALANCE
R768
RGB
BRIGHT
R776
COMPONENT
WHITE
BALANCE
R773
RGB
WHITE
BALANCE
R141
RGB
LEVEL
R737
R. LEVEL

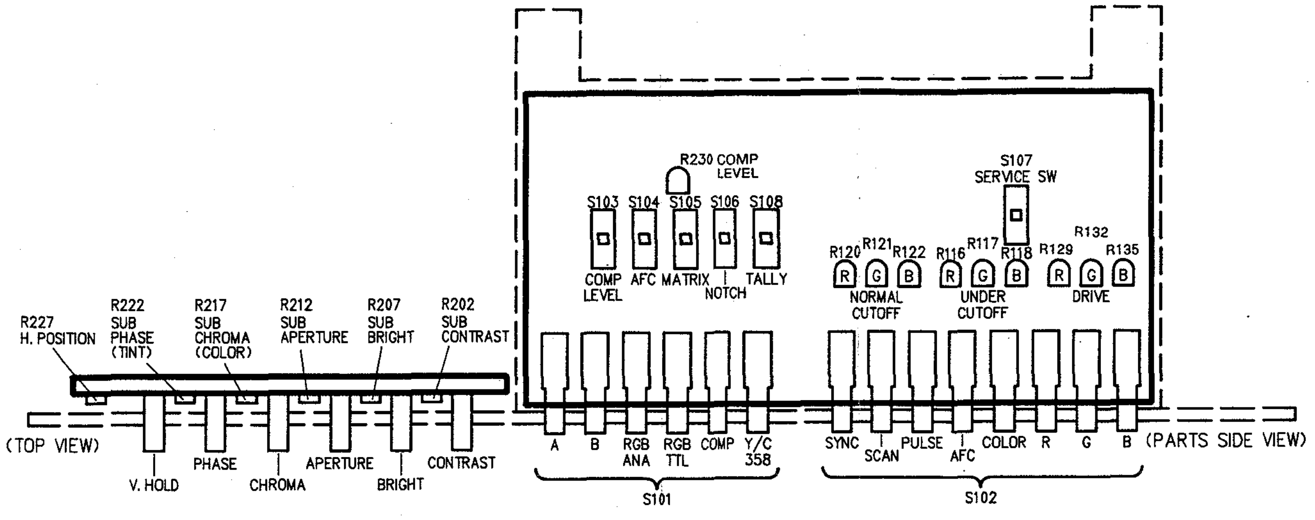
(SOLDER SIDE VIEW)

FX-8006A (DECODER P.C.B.)


R142
NTSC
SUB CONT
R167
NTSC
SUB COLOR
R169
NTSC
SUB
TINT
IC 101
TP-64B
R117
COMB2
C171
NTSC
COLOR SYNC
TRIMMER
R120
COMB
PHASE
TP-64A
T101
B.P. TRANSF
TP-65
TP-48
TP-49
T102
DL PHASE
TRANSF
R106
COMB
R361
PULSE CROSS
PULSE PHASE
R218
PAL/SECAM
SUB CONT
C276
NOTCH
F. ADJUST
C336
NORMAL
PULSE
PHASE
R318
DL AMP
(SECAM)
T202
IDENT
TRANSF
C293
LISSA JOUS
TRIMMER
R356
CRAWLING
T203
BELL
TRANSF
TP-53
IC203
C340
PAL
COLOR
SYNC
TRIMMER
R310
PAL SUB
COLOR
T301
B.P. TRANSF
C291
CRAWLING
IC202
T201
DISCRI
TRANSF
R307
DL AMP
PAL
T205
DISCRI
TRANSF
TP-70
C294
LISSAJOUS
TRIMMER
R265
SECAM
SUB COLOR

(PARTS SIDE VIEW)

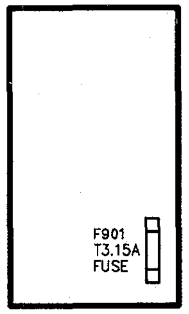
FX-4008A (CONTROL/SWITCH P.C.B.)


R230 COMP
LEVEL
S107
SERVICE SW
S103
S104
S105
S106
S108
COMP
LEVEL
AFC
MATRIX
NOTCH
TALLY
R120
R121
R122
R116
R117
R118
R129
R132
R135
R
G
B
NORMAL
CUTOFF
UNDER
CUTOFF
DRIVE
R227
H. POSITION
R222
SUB
PHASE
(TINT)
R217
SUB
CHROMA
(COLOR)
R212
SUB
APERTURE
R207
SUB
BRIGHT
R202
SUB
CONTRAST
(TOP VIEW)
V. HOLD
PHASE
CHROMA
APERTURE
BRIGHT
CONTRAST
A
B
RGB
ANA
RGB
TTL
COMP
Y/C
358
S101
SYNC
SCAN
PULSE
AFC
COLOR
R
G
B
S102
(PARTS SIDE VIEW)

FRONT

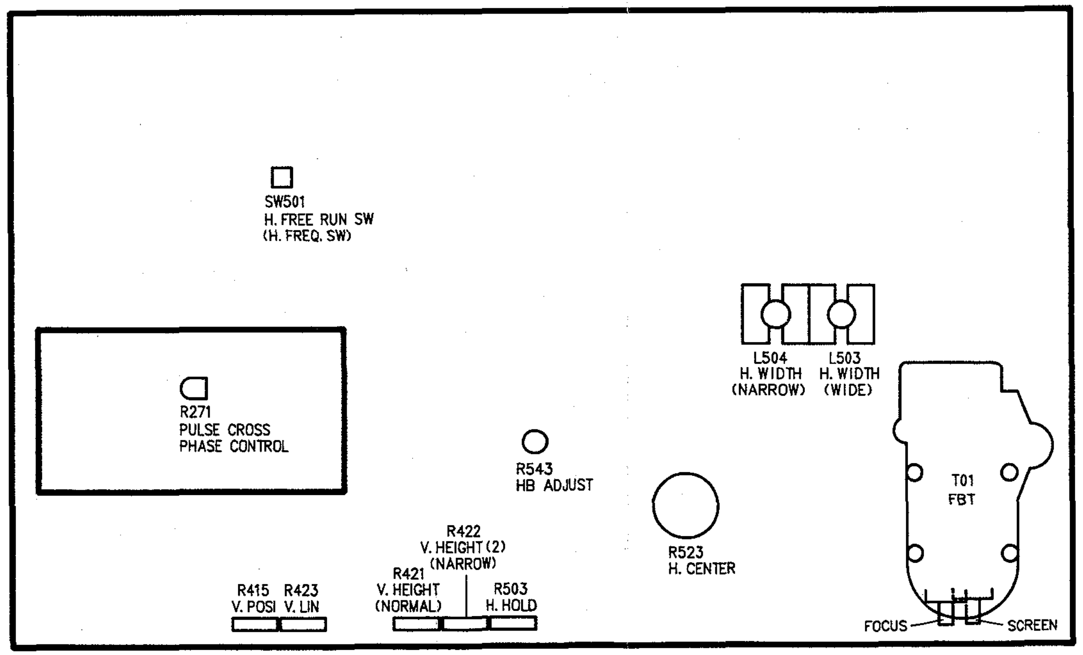
FRONT

FX-9005A
(L. FILTER P.C.B.)


F901
T3.15A
FUSE

(PARTS SIDE VIEW)

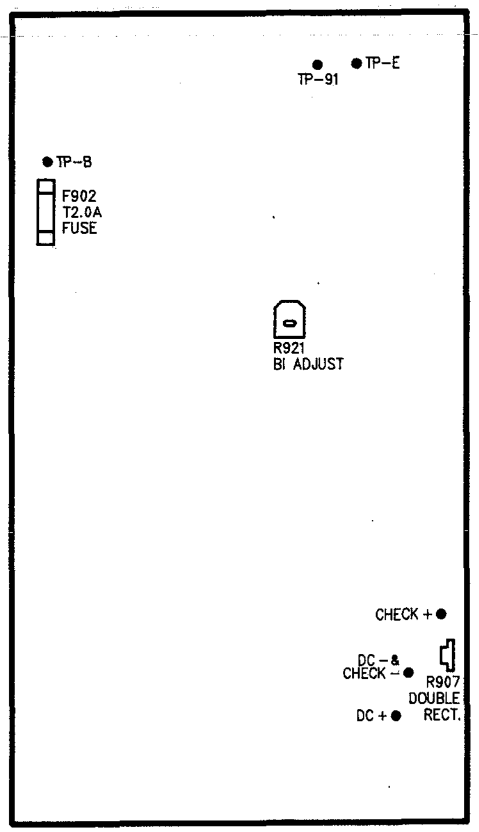
FX-2002A
(DEF./PROTECTOR P.C.B.)


SW501
H. FREE RUN SW
(H. FREQ. SW)
L504
H. WIDTH
(NARROW)
L503
H. WIDTH
(WIDE)
R271
PULSE CROSS
PHASE CONTROL
R543
HB ADJUST
T01
FBT
R523
H. CENTER
R422
V. HEIGHT (2)
(NARROW)
R421
V. HEIGHT
(NORMAL)
R503
H. HOLD
R415
V. POSI
R423
V. LIN
FOCUS
SCREEN

(PARTS SIDE VIEW)

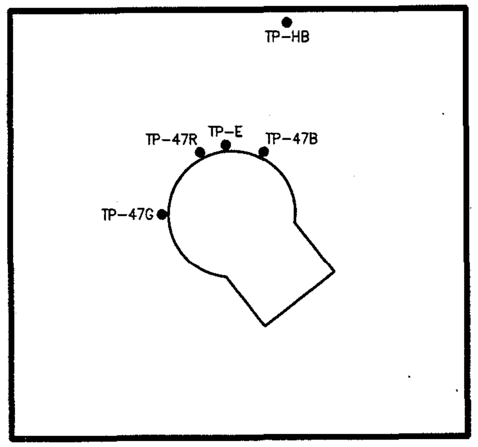
TOP

FX-9005A (POWER P.C.B.)


TP-91
TP-E
TP-B
F902
T2.0A
FUSE
R921
BI ADJUST
CHECK +
DC-&
CHECK -
R907
DOUBLE
RECT.
DC +

(PARTS SIDE VIEW)

FX-1009A (CRT SOCKET P.C.B.)


TP-HB
TP-47R
TP-E
TP-47B
TP-47G

(SOLDER SIDE VIEW)

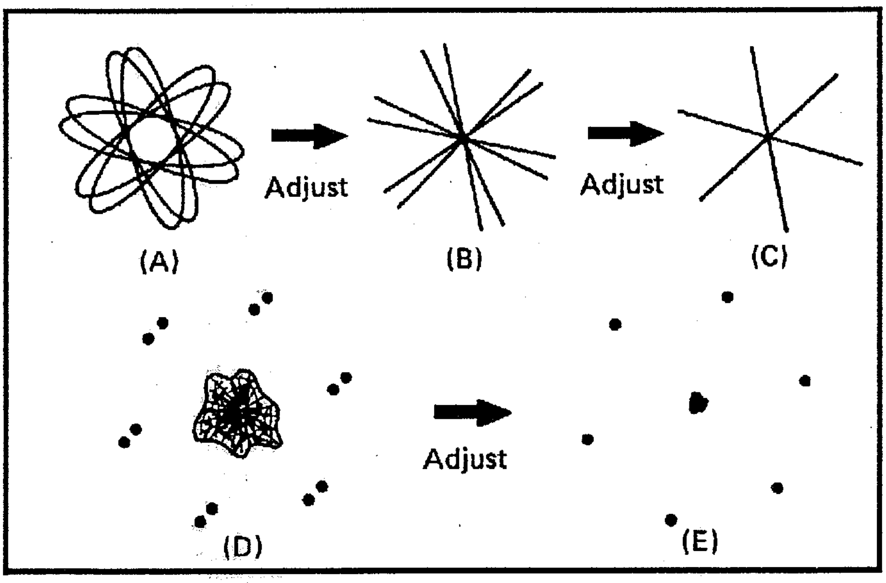
SERVICE ADJUSTMENTS

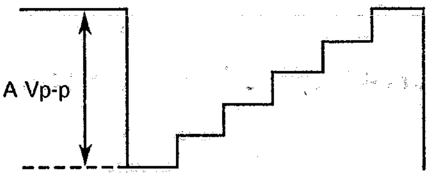
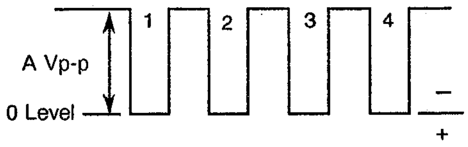
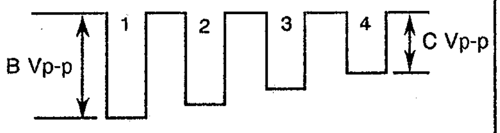
TOOLS AND FIXTURES FOR ADJUSTMENT

- DC VOLTMETER
- OSCILLOSCOPE
- PATTERN GENERATOR (PAL,SECAM)

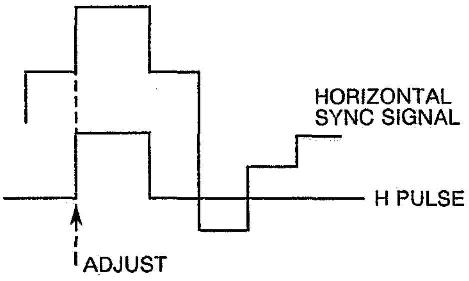
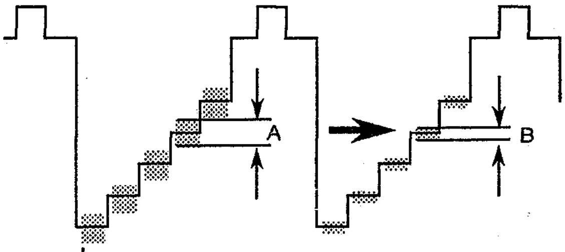
1.CHANGE OF ADJUSTMENTS

No.	Item	Measuring instrument	Test point	Adjustment part	Description
1	PAL CIRCUIT Adjustment	Pattern generator (PAL,SECAM) Oscilloscope	TP-48 TP-49 PIN ⑥⑪⑬⑭ of IC203 [DECODER BOARD]	C340 (PAL COLOUR SYNC) C293 (LISSAJOUS) C294 (LISSAJOUS) R307 (DL AMP PAL) [DECODER BOARD]	1. Connect between the pin ⑬ and ⑪ (+12V line) of IC203 with 10kΩ resistor. 2. Short both the pin ⑭ and ⑥ (GND) of IC203. 3. Input a PAL colour bar signal. 4. Adjust the C340 (PAL COLOUR SYNC) so that the screen (colour bar) is colour synchronized. 5. Connect the oscilloscope with TP-48 and TP-49. And set in X - Y mode. 6. Adjust the signal (A) to be (B) ,to be (C) using R307 (DL AMP PAL) and C293 (LISSAJOUS). 7. If adjustment is inadequate, also adjust with C294 (LISSAJOUS). 8. Input a PAL split colour bar signal. 9. Adjust the signal (D) to be (E) using C340 (PAL COLOUR SYNC).



No.	Item	Measuring instrument	Test point	Adjustment part	Description
2	CONTRAST (I) (II) (III) (IV)	Pattern generator (PAL,SECAM) Voltmeter Oscilloscope	TP-47B TP-E [CRT SOCKET BOARD]	(I) : R135 (B DRIVE) [FRONT CONTROL BOARD] (II) : R142 (NTSC SUB CONT) [DECODER BOARD] (III) : R141 (RGB LEVEL) [SIGNAL BOARD] (IV) : R218 (PAL / SECAM SUB CONT) [DECODER BOARD]	Change the adjustment level (p-p) as indicated below.  A. CONTRAST I : 32Vp-p → **36Vp-p** CONTRAST II: 24Vp-p → **27Vp-p** CONTRAST III: 28Vp-p → **31Vp-p** CONTRAST IV: 24Vp-p → **27Vp-p**
3	COLOUR (I) (II) (III) (IV)	Pattern generator (PAL,SECAM) Voltmeter Oscilloscope	TP-47B TP-E [CRT SOCKET BOARD]	(I) : R217 (SUB CHROMA) R222 (SUB PHASE) R230 (COMP LEVEL) [FRONT CONTROL BOARD] (II) : R167 (NTSC SUB COLOUR) R169 (NTSC SUB TINT) [DECODER BOARD] (III) : R265 (SECAM SUB COLOUR) [DECODER BOARD] (IV) : R310 (PAL SUB COLOUR) [DECODER BOARD]	Change the adjustment level (p-p) as indicated below.  A. COLOUR I : 32Vp-p → **44Vp-p** COLOUR II: 24Vp-p → **27Vp-p** COLOUR III: 24Vp-p → **27Vp-p** COLOUR IV: 24Vp-p → **27Vp-p**  B. COLOUR I : 32Vp-p → **36Vp-p** C COLOUR I : 23Vp-p → **27Vp-p**

2.ADDITION OF ADJUSTMENTS

No.	Item	Measuring instrument	Test point	Adjustment part	Description
1	H PULSE Adjustment	Pattern generator (PAL) Oscilloscope	TP-65 (Y) TP-70 (H PULSE) [DECODER BOARD] SW102 (PULSE CROSS SW) [FRONT CONTROL BOARD]	C336 (NORMAL PULSE PHASE) R361 (PULSE CROSS PULSE PHASE) [DECODER BOARD]	This adjustment should be performed after adjusting the HORIZONTAL CENTER. 1. Input the PAL colour bar signal. 2. Connect a dual trace oscilloscope to TP-65(Y) and TP-70 (H PULSE). Expand the horizontal sync signal for easier observation. 3. As indicated below, adjust C336 (NORMAL PULSE PHASE) to align the H PULSE rising edge with the front porch of the horizontal sync signal.  4. Push the SW102 (PULSE CROSS SW) and confirm absence of phase deviation in the waveform. If deviated, adjust R361(PULSE CROSS PULSE PHASE) to shift the H PULSE toward the left (phase advance) of the Y signal horizontal sync.
2	NOTCH Adjustment	Pattern generator (SECAM) Oscilloscope	TP-65 (Y) [DECODER BOARD]	C276 (NOTCH) [DECODER BOARD]	This adjustment should be performed after adjusting the CONTRAST (Ⅳ). 1. Input the SECAM colour bar signal. 2. Connect the oscilloscope with TP-65 (Y). 3. Adjust C276 (NOTCH) to minimize the chroma component and adjust the waveform (A) to be (B). Observe the waveform for 2H periods on the oscilloscope. Adjust so that they are even and with minimum chroma component. 

No.	Item	Measuring instrument	Test point	Adjustment part	Description
6	**CRAWLING Adjustment**	Pattern generator (SECAM) Oscilloscope	TP-48 (R-Y) [DECODER BOARD]	C291 (CRAWLING) R318 (DL AMP SECAM) R356 (CRAWLING) [DECODER BOARD]	1. Input the SECAM split colour bar signal. 2. Connect the oscilloscope with TP-48 (R-Y) 3. Set the oscilloscope synchronization to AC and adjust to obtain the black and white signal component at the top of the colour bar. (Fig.1) 4. Turn R356 (CRAWLING) fully counter-clockwise. (Fig.2 A) Gradually turn it clockwise to where each 1H waveform is the same. (Fig.2 B) 5. Adjust R318 (DL AMP SECAM) to align the DC levels of each 1H. (Fig.3 A) 6. Adjust R356 (CRAWLING) to align the V sag levels of each 1H. (Fig.3 B) 7. Adjust R318 (DL AMP SECAM) to align the DC levels . (Fig.4) 8. Gradually turn R356 (CRAWLING) white observing the screen to minimize crawling. But instead of every 1H, observe the black and white lines every 6H. Also note not only red, but the crawling appearances at the blue and green locations as well. 9. Again use the oscilloscope and adjust R318 (DLMP SECAM) to align the DC levels. 10. While observing the oscilloscope, adjust C291 (CRAWLING) to reduce sag. Since this affects the 1H DC levels, readjust R318 (DLMP SECAM). 11. Finally observe the screen and confirm crawling. If excessive, repeat steps 8 to 11.

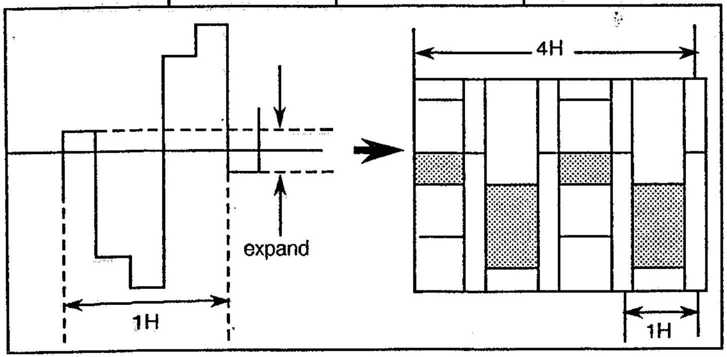


Fig.1

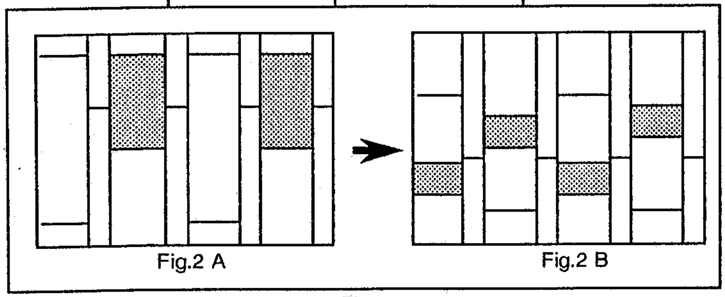


Fig.2 A
Fig.2 B

Fig.2

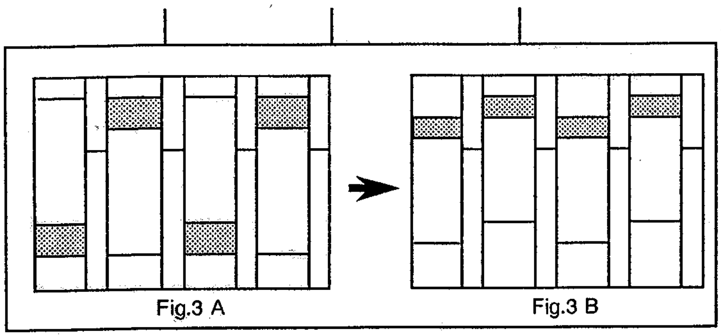


Fig.3 A
Fig.3 B

Fig.3

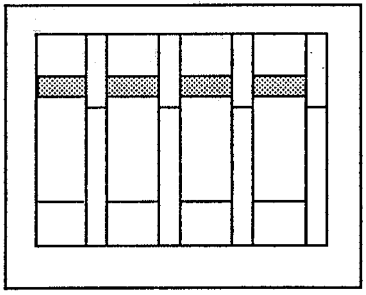
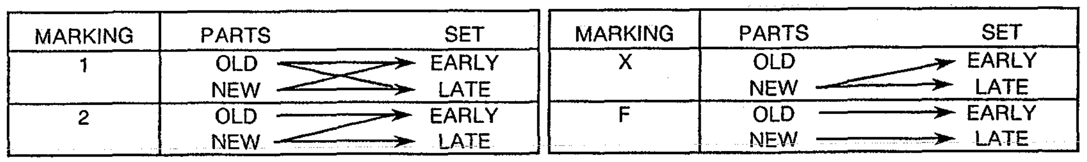


Fig.4

CHANGES IN REPLACEMENT PARTS LIST

For identifying interchangeability marking, refer to the following table.



MARKING	PARTS	SET
1	OLD NEW	EARLY LATE
2	OLD NEW	EARLY LATE

MARKING	PARTS	SET
X	OLD NEW	EARLY LATE
F	OLD NEW	EARLY LATE

Affected reference No., refer to the following table.

LOT	SERIAL No.	LOT	SERIAL No.	LOT	SERIAL No.	LOT	SERIAL No.
#4	09360058	#5	13360088	#6	14360188	#7	14360238
#8	15360288	#10	16360388	#11	17360438	#16	09460688
#18	11460838	#20	06570988				

■ MAIN REPLACEMENT PARTS LIST (P.18~19)

SYNBOL NO.	PARTS NO.		PARTS NAME	INTERCHANGEABILITY	REMARKS
	PREVIOUS	PRESENT			
	CE40961-00A	A75034-B	PC MAGNET	2	#4~
	CJ30033-00A	CE40764-00A	WEDGE ASSY	1	×5,#16~
VR1773	QVPC609-104H	QVPC609-504H	V R (RGB W/B)	×	500kΩ B,#16~
VR1776	QVPC609-501H	QVPC609-102H	V R (COMPONENT W/B)	×	1kΩ B,#5~
VR1778	QVPC609-104H	QVPC609-504H	V R (〃 VIDEO W/B)	×	500kΩ B,#18~
VR4230	QVPC609-104H	QVPC609-204H	V R (COMP LEVEL)	2	200kΩ B,#7~
VR8142	QVPC609-102H	QVPC609-202H	V R (N.SUB CONT)	×	2kΩ B,#5~
VR8318	QVPC609-104H	QVPC609-203H	V R (CRAWLING)	×	20kΩ B,#5~
VR8356	------------------	QVPC609-203H	V R (DL PAHSE)	-------	20kΩ B,#5~
VR8361	------------------	QVPC609-503H	V R (PULSE CROSS / PHASE)	-------	50kΩ B,#5~
DL8203	CE41260-001	CE41489-001	1H DELAY LINE	×	#5~
⚠ FR8268	QRZ0054-180M	------------------	F R	-------	#5~

■ CHASSIS AND CABINET PARTS LIST (P.20)

VIEW NO.	PARTS NO.		PARTS NAME	INTER-CHANGE-ABILITY	REMARKS
	PREVIOUS	PRESENT			
25	CE40961-00A	A75034-B	PC MAGNET	2	#4~
26	CJ30033-00A	CE40764-00A	WEDGE ASSY	1	×5,#16~
36	SBSB4012Z	SBSB4016Z	TAP SCREW	×	×4, For FOOT,#20~
49	CM44627-A01	CM44627-B01	BUTTON	2	×3,#11~

PC BOARD PARTS LIST

■ SIGNAL / CRT SOCKET P.C.B.ASSY (FX-1009A) (P.27~28)

SYNBOL NO.	PARTS NO.		PARTS NAME	INTER-CHANGE-ABILITY	REMARKS
	PREVIOUS	PRESENT			
VARIABLE	RESISTOR				
VR1773	QVPC609-104H	QVPC609-504H	V R (RGB W/B)	×	500kΩ B,#16~
VR1776	QVPC609-501H	QVPC609-102H	V R (COMPONENT W/B)	×	1kΩ B,#5~
VR1778	QVPC609-104H	QVPC609-504H	V R (〃 VIDEO W/B)	×	500kΩ B,#18~
RESISTOR					
R1240	QRG029J-330	------------------	OM R	-------	#16~
CAPACITO	R				
C1195	QFV71HJ-474MZ	QEN61HM-105Z	BP E CAP.	2	1μF, 50V,M,#8~
C1196	QFV71HJ-474MZ	QEN61HM-105Z	BP E CAP.	2	1μF, 50V,M,#8~
DIODE					
D1304	------------------	RD8.2E(B1)	SI .ZENER DIODE	-------	#5~
TRANSIST	OR				
Q1301	------------------	2SA1015(YG)	SI. TRANSISTOR	-------	#5~
IC					
IC1105	AN5867K	AN5867K-A	I.C.	×	#16~

■ DEF / PULSE CROSS P.C.B.ASSY (FX-2002A) (P.29)

SYNBOL NO.	PARTS NO.		PARTS NAME	INTER-CHANGE-ABILITY	REMARKS
	PREVIOUS	PRESENT			
RESISTOR					
R2417	QRX019J-1R8S	QRX019J-2R2S	MF R	2	2.2Ω,1W,J,#5~
R2418	QRX019J-391S	QRX019J-271S	MF R	2	270Ω,1W,J,#7~
R2418	QRX019J-271S	QRX019J-331S	MF R	2	330Ω,1W,J,#8~
CAPACITO	R				
C2519	QFZ0089-534S	QFZ0089-624S	MPP CAP.	2	0.62μF, 200V,J,#5~
COIL					
L2101	------------------	A76186-2.2	PEAKING COIL	-------	2.2μH,#5~
L2502	CE41472-001	CE41472-002	LINEARITY COIL	2	#5~

■ CONTROL / TALLY / SWITCH P.C.B.ASSY (FX-4008A) (P.31)

SYNBOL NO.	PARTS NO.		PARTS NAME	INTER-CHANGE-ABILITY	REMARKS
	PREVIOUS	PRESENT			
VARIABLE	RESISTOR				
VR4230	QVPC609-104H	QVPC609-204H	V R (COMP LEVEL)	2	200kΩ B,#7~
DIODE					
D4109	------------------	1SS133-T2	SI. DIODE	-------	#20~
D4110	------------------	1SS133-T2	SI. DIODE	-------	#20~

■ DECODER P.C.B.ASSY (FX-8006A) (P.32~33)

SYNBOL NO.	PARTS NO.		PARTS NAME	INTER-CHANGE -ABILITY	REMARKS
	PREVIOUS	PRESENT			
VARIABLE	RESISTOR				
VR8142	QVPC609-102H	QVPC609-202H	V R (N.SUB CONT)	×	2kΩ B,#5~
VR8318	QVPC609-104H	QVPC609-203H	V R (CRAWLING)	×	20kΩ B,#5~
VR8356	------------------	QVPC609-203H	V R (DL PHASE)	-------	20kΩ B,#5~
VR8361	------------------	QVPC609-503H	V R (PULSE CROSS / PHASE)	-------	50kΩ B,#5~
RESISTOR					
R8345	QRD161J-683Y	QRD161J-563Y	C R	2	56kΩ 1/6W,J,#6~
R8345	QRD161J-563Y	QRV141F-6202AY	MF R	×	62kΩ 1/4W,F,#10~
CAPACITO	R				
C8167	QFV71HJ-473MZ	------------------	TF CAP.	-------	#5~
C8287	------------------	QFV71HJ-104MZ	TF CAP.	-------	0.1μF, 50V,J,#5~
C8288	------------------	QFV71HJ-474MZ	TF CAP.	-------	0.47μF, 50V,J,#5~
C8291	------------------	QAT3110-300A	TRIMMER CAP.	-------	30pF,#5~
C8293	------------------	QAT3110-300A	TRIMMER CAP.	-------	30pF,#5~
C8294	------------------	QAT3110-300A	TRIMMER CAP.	-------	30pF,#5~
C8336	------------------	QAT3110-300A	TRIMMER CAP.	-------	30pF,#5~
C8353	------------------	QFV81HJ-474M	TF CAP.	-------	0.47μF, 50V,J,#8~
COIL					
L8104	------------------	A76186-47	PEAKING COIL	-------	47μH,#8~
L8165	A76186-120Z	------------------	PEAKING COIL	-------	#8~
L8203	A76186-27Z	A76186-15Z	PEAKING COIL	2	15μH,#5~
L8203	A76186-15Z	A76186-12Z	PEAKING COIL	2	12μH,#11~
L8203	A76186-12Z	A76186-10Z	PEAKING COIL	2	10μH,#17~
L8204	A76186-1000	------------------	PEAKING COIL	-------	#5~
L8245	A76186-15Z	------------------	PEAKING COIL	-------	#5~
L8248	A76186-15Z	------------------	PEAKING COIL	-------	#5~
L8250	------------------	A76186-10Z	PEAKING COIL	-------	10μH,#5~
L8251	------------------	A76186-10Z	PEAKING COIL	-------	10μH,#5~
L8252	------------------	A76186-3.9Z	PEAKING COIL	-------	3.9μH,#5~
L8303	A76186-4.7Z	------------------	PEAKING COIL	-------	#5~
L8304	A76186-4.7Z	------------------	PEAKING COIL	-------	#5~
L8305	A76186-56Z	A76186-120Z	PEAKING COIL	2	12μH,#5~
DIODE					
D8103	------------------	1SS133	SI. DIODE	-------	#11~
D8247	------------------	1SS133-T2	SI. DIODE	-------	#5~
D8248	------------------	1SS133-T2	SI. DIODE	-------	#5~
D8249	------------------	1SS133-T2	SI. DIODE	-------	#5~
D8250	------------------	1SS133-T2	SI. DIODE	-------	#5~
TRANSIST	OR				
Q8248	2SA1015(O,Y)	------------------	SI. TRANSISTOR	-------	#5~
Q8249	2SC1815(Y,GR)	------------------	SI. TRANSISTOR	-------	#5~
Q8332	2SC1815(O,Y)-Y	------------------	CHIP. TRANSISTOR	-------	#5~
OTHER					
DL8203	CE41260-001	CE41489-001	1H DELAY LINE	×	#5~
FR8268	QRZ0054-180M	------------------	F R	-------	#5~

■ POWER / LINE FILTER P.C.B.ASSY (FX-9005A) (P.34)

SYNBOL NO.	PARTS NO.		PARTS NAME	INTER-CHANGE -ABILITY	REMARKS
	PREVIOUS	PRESENT			
CAPACITO	R				
C9928	QCZ9033-472A	QCZ9036-472M	C CAP.	2	4700pF, AC400V,K,#11~
C9929	QCZ9033-472A	QCZ9036-472M	C CAP.	2	4700pF, AC400V,K,#11~

■ PACKING DIAGRAM (P.35)

VIEW NO.	PARTS NO.		PARTS NAME	INTER-CHANGE -ABILITY	REMARKS
	PREVIOUS	PRESENT			
	CP10571-B0N	CP10571-C0N	PACKING CASE	×	#5~

JVC
VICTOR COMPANY OF JAPAN,LIMITED
TELEVISION RECEIVER DIVISION 1106 Iwai-city,Ibaraki-prefecture,306-06,Japan

VM-R200PSN
Printed in Japan
VP
T.N & J.K

JVC VM-R200PSN SCHEMATIC DIAGRAM

■ NOTICE

- ○ The voltage reading and waveform ware measured at each point with a multi-meter and an oscilloscope while receiving a video signal (color bar) through the video input terminal (A) on the monitor.
  The measurements were made with each VR under the condition just after the shipment. The figures of the signal circuits may be more or less different after adjustments, so use the figures simply for reference.
  Multimeter used
  DC 20kΩ/V
  Given figures are all DC voltages.
  Sweep speed of oscilloscope
  H → 20 μS/div.
  V → 5 mS/div.
  Others → sweep speed specified
- ○ Since the schematic diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

■ SAFETY

- ○ FR (-WW- FR) denotes a fusible resistor which operates as a fuse. When replacing fusible resistors parts indicated with black shading (▨) in the circuit diagrams, be sure to ensure safety by using designated parts.
- ○ As to other parts too, use designated parts to maintain safety and performance.

■ INDICATING METHOD OF PARTS SYMBOL NUMBERS

- ○ Inside board (Example) FX-1009A: R1209 → R209
- ○ Outside board (Example) R0001 → R01

■ CIRCUIT DIAGRAM INDICATING METHOD

1. Resistor
   - ○ Resistance value
     Without unit : [Ω] K : [kΩ] M : [MΩ]
   - ○ Rated allowable power
     Without indication : 1/6W & 1/4W Others : Indicated
   - ○ Type

Without indication	: Carbon resistor
OMR	: Oxide metal film resistor
UNF	: Unflammable resistor
CMF, MFR	: Coating metal film resistor
FR	: Fusible resistor

* Composition resistor 1/2 [W] is indicated as 1/2S or Comp.

2. Capacitor
   - ○ Capacitance
     Above 1 [pF] : Below 1 [μF]
   - ○ Withstand voltage

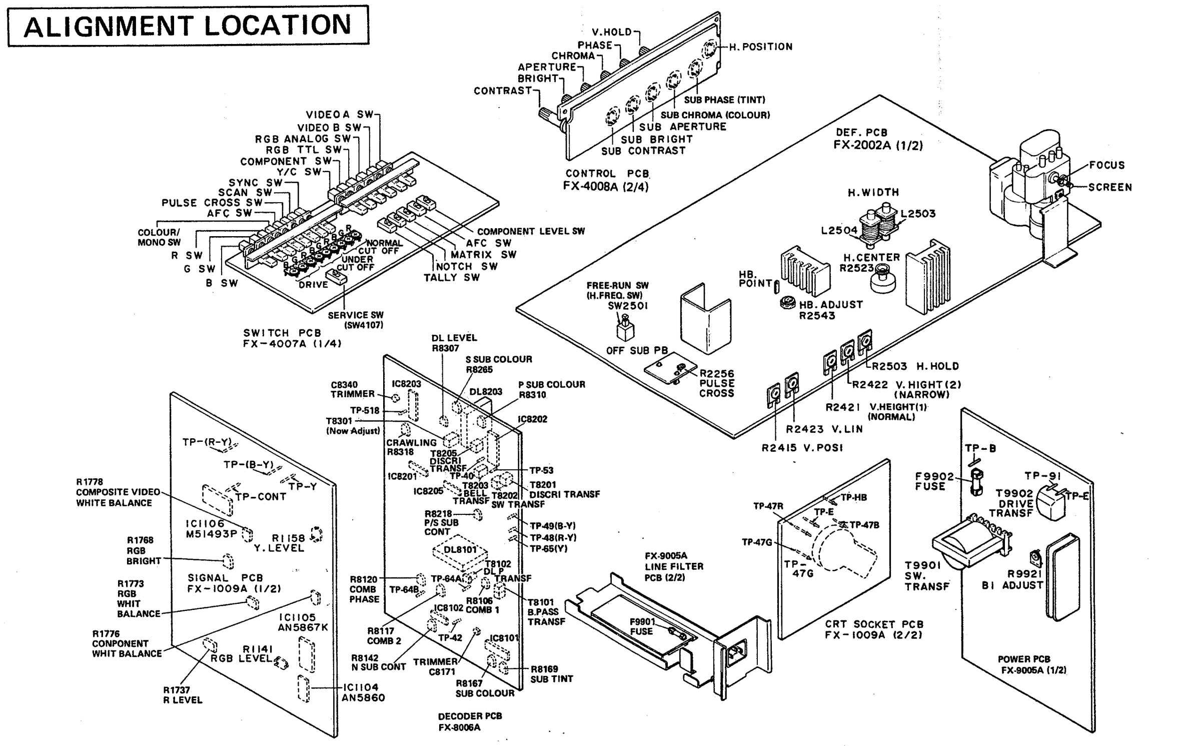
Without indication	: DC 50 [V]
Others	: DC withstand voltage [V]
AC indicated	: AC withstand voltage [V]

- ○ Indications for electrolitic capacitors are as follows. (example) 47/50 → capacitance [μF) / pressure-tightness [V]
- ○ Type

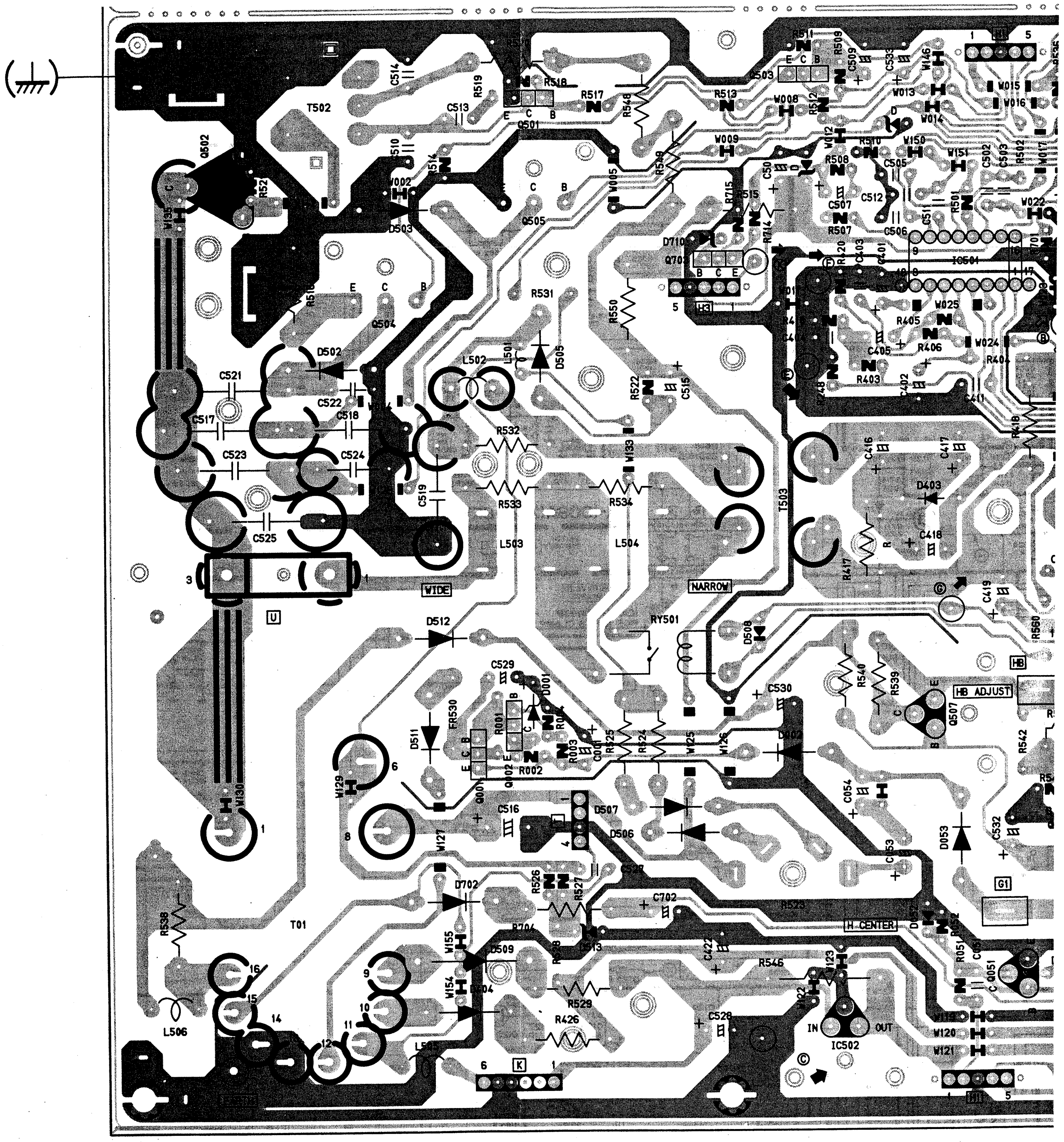
Without indication	: Ceramic capacitor
MY	: Mylar capacitor
MM	: Metalized mylar capacitor
PP	: Polypropylene capacitor
MPP	: Metalized polypropylene capacitor
NP	: Nonpolar electrolytic capacitor
BP	: Bipolar electrolytic capacitor
TAN.	: Tantalum capacitor

3. Coil
   Without unit : [μH]
4. Test point & GND symbol
   ⚲ : Test point by miniature GT pin,
   ⚲ : Only test point is indicated, ⏚ : EARTH GND,
   ⊥ : LIVE GND, ⏚ : NEUTRAL GND
5. Connection method
   ☐ : Connector , —▶— : Receptacle
   ○ ◯ : Wrapping or soldering
6. Power Supply (Each voltage reading specified.)
   —— : B1 Voltage(110V) ▬▬▬ : 15 V LINE
   ▬▭▬▭ : 12 V LINE

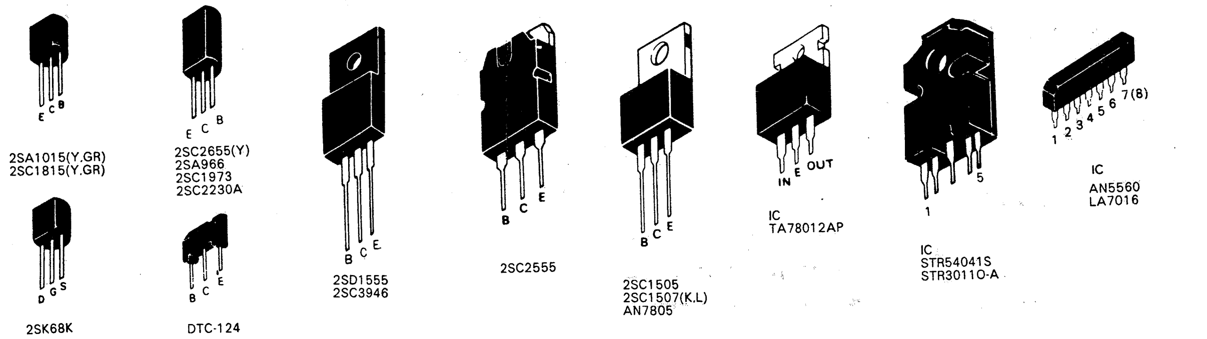
ALIGNMENT LOCATION


V.HOLD
PHASE
CHROMA
APERTURE
BRIGHT
CONTRAST
H. POSITION
SUB PHASE (TINT)
SUB CHROMA (COLOUR)
SUB APERTURE
SUB BRIGHT
SUB CONTRAST
CONTROL PCB
FX-4008A (2/4)
VIDEO A SW
VIDEO B SW
RGB ANALOG SW
RGB TTL SW
COMPONENT SW
Y/C SW
SYNC SW
SCAN SW
PULSE CROSS SW
AFC SW
COLOUR/MONO SW
R SW
G SW
B SW
NORMAL CUT OFF
UNDER CUT OFF
DRIVE
COMPONENT LEVEL SW
AFC SW
MATRIX SW
NOTCH SW
TALLY SW
SERVICE SW (SW4107)
SWITCH PCB
FX-4007A (1/4)
DEF. PCB
FX-2002A (1/2)
FOCUS
SCREEN
H.WIDTH
L2503
L2504
H.CENTER
R2523
HB. POINT
HB. ADJUST
R2543
FREE-RUN SW
(H.FREQ. SW)
SW2501
OFF SUB PB
R2256
PULSE CROSS
R2503 H.HOLD
R2422 V.HIGHT(2) (NARROW)
R2421 V.HEIGHT(1) (NORMAL)
R2423 V.LIN
R2415 V.POSI
DL LEVEL
R8307
S SUB COLOUR
R8265
P SUB COLOUR
R8310
C8340 TRIMMER
IC8203
DL8203
IC8202
TP-518
T8301 (Now Adjust)
CRAWLING R8318
T8205 DISCRI TRANSF
TP-40
IC8201
TP-53
T8201 DISCRI TRANSF
IC8205
T8203 BELL TRANSF
T8202 SW TRANSF
R8218 P/S SUB CONT
TP-49(B-Y)
TP-48(R-Y)
TP-65(Y)
DL8101
T8102 DL P TRANSF
R8120 COMB PHASE
TP-64A
TP-64B
R8106 COMB 1
T8101 B.PASS TRANSF
IC8102
R8117 COMB 2
TP-42
IC8101
R8142 N SUB CONT
TRIMMER C8171
R8167 SUB COLOUR
R8169 SUB TINT
DECODER PCB
FX-8006A
TP-(R-Y)
TP-(B-Y)
TP-Y
TP-CONT
R1778 COMPOSITE VIDEO WHITE BALANCE
IC1106 M51493P
R1158 Y.LEVEL
R1768 RGB BRIGHT
SIGNAL PCB
FX-1009A (1/2)
R1773 RGB WHIT BALANCE
IC1105 AN5867K
R1776 CONPONENT WHIT BALANCE
R1141 RGB LEVEL
R1737 R LEVEL
IC1104 AN5860
FX-9005A LINE FILTER PCB (2/2)
F9901 FUSE
TP-47R
TP-HB
TP-E
TP-47B
TP-47G
CRT SOCKET PCB
FX-1009A (2/2)
TP-B
F9902 FUSE
TP-91
T9902 DRIVE TRANSF
TP-E
T9901 SW. TRANSF
R9921 B1 ADJUST
POWER PCB
FX-9005A (1/2)

DEF P.C. BOARD FX-2002A (1/2)


T502
C514
R519
C513
Q501
R518
R517
R548
R513
W008
R511
R509
C533
W013
W014
W015
W016
Q502
R52
R510
R514
W002
D503
Q505
W005
R549
W009
R508
C505
W150
W151
C507
R507
C506
C512
IC501
D710
Q703
H3
R516
Q504
R531
R550
D502
C521
C517
C522
C518
C523
C524
L502
L501
D505
R532
R533
R534
R522
C515
W133
C519
C525
T503
L503
L504
C416
C417
D403
C418
R417
WIDE
NARROW
U
D512
RY501
D508
C419
C529
Q001
FR530
R001
Q002
R002
R003
R125
R124
W125
W126
C530
R540
R539
Q507
HB ADJUST
HB
R542
D511
W129
W130
C516
D507
D506
C054
D053
C532
W127
D702
R526
R527
C527
C702
T01
R538
R704
W155
W154
D509
D504
R529
R426
C422
H CENTER
R546
W123
R525
IC502
IN
OUT
C528
L506
G1
K
W120
W121
W025
R405
R406
C405
W024
R403
R418

■ BASING OF TRANSISTOR AND IC


E C B
2SA1015(Y.GR)
2SC1815(Y.GR)
E C B
2SC2655(Y)
2SA966
2SC1973
2SC2230A
D G S
2SK68K
B C E
DTC-124
B C E
2SD1555
2SC3946
B C E
2SC2555
B C E
2SC1505
2SC1507(K.L)
AN7805
IN E OUT
IC
TA78012AP
1
5
IC
STR54041S
STR30110-A
1 2 3 4 5 6 7(8)
IC
AN5560
LA7016

JVC VICTOR COMPANY OF JAPAN, Ltd.

AM

resistor
sistor
n resistor

d as 1/2S

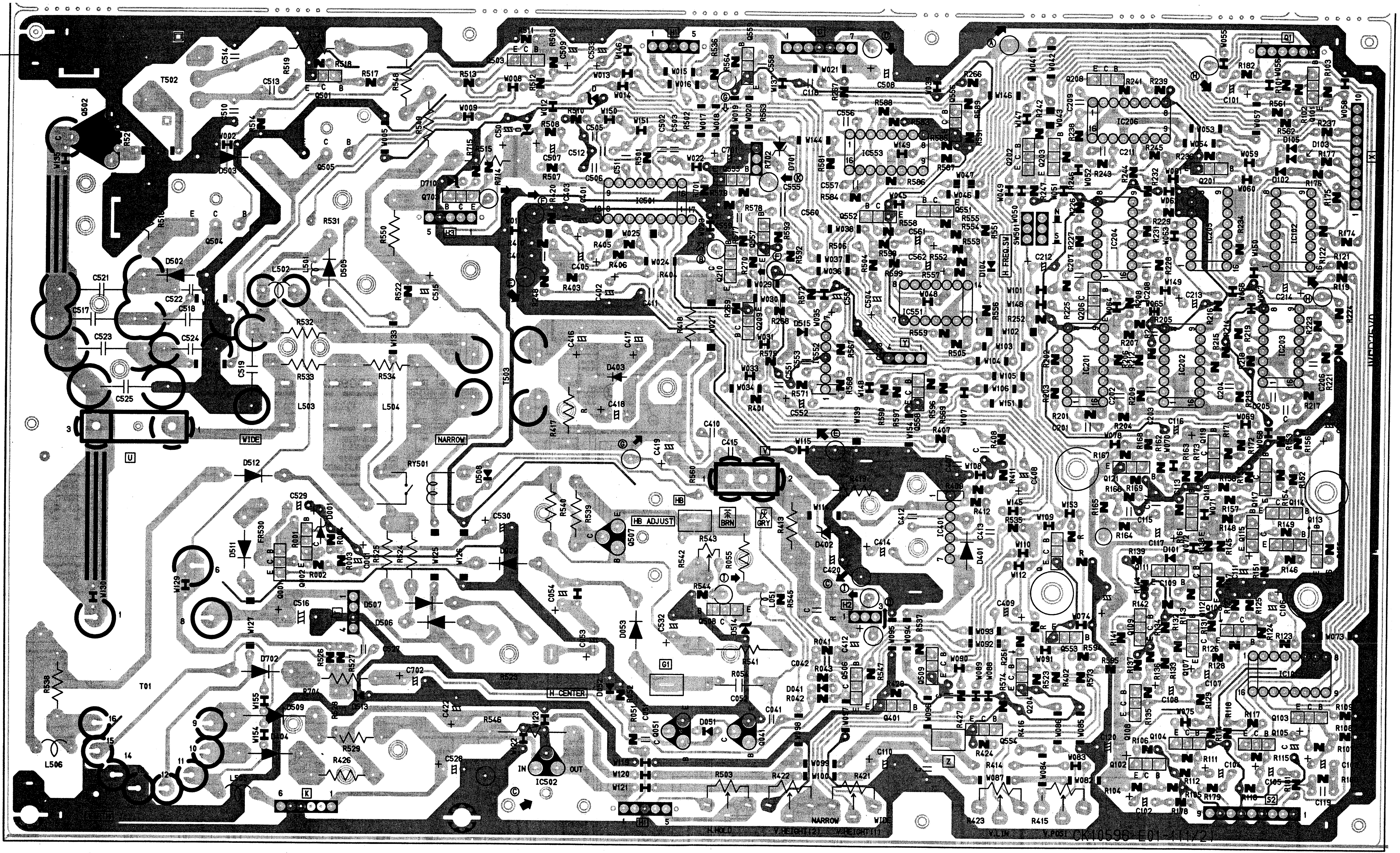
[V]
[V]
s follows.
pressure-

acitor
or

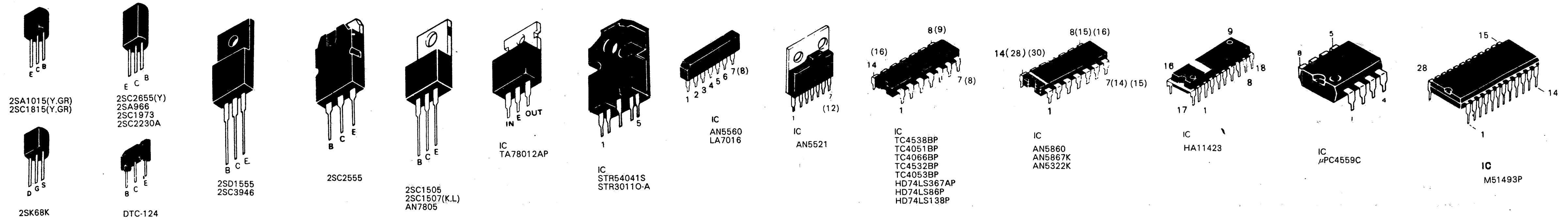
GND,

d.)
E

DEF P.C. BOARD FX-2002A (1/2)


WIDE
NARROW
HB ADJUST
HB
BRN
GRY
H CENTER
H FREQ.SW
H.HOLD
V.HEIGHT(2)
V.HEIGHT(1)
NARROW
WIDE
V.LIN
V.POSI
IN
OUT
CK10596-E01-1(1/2)

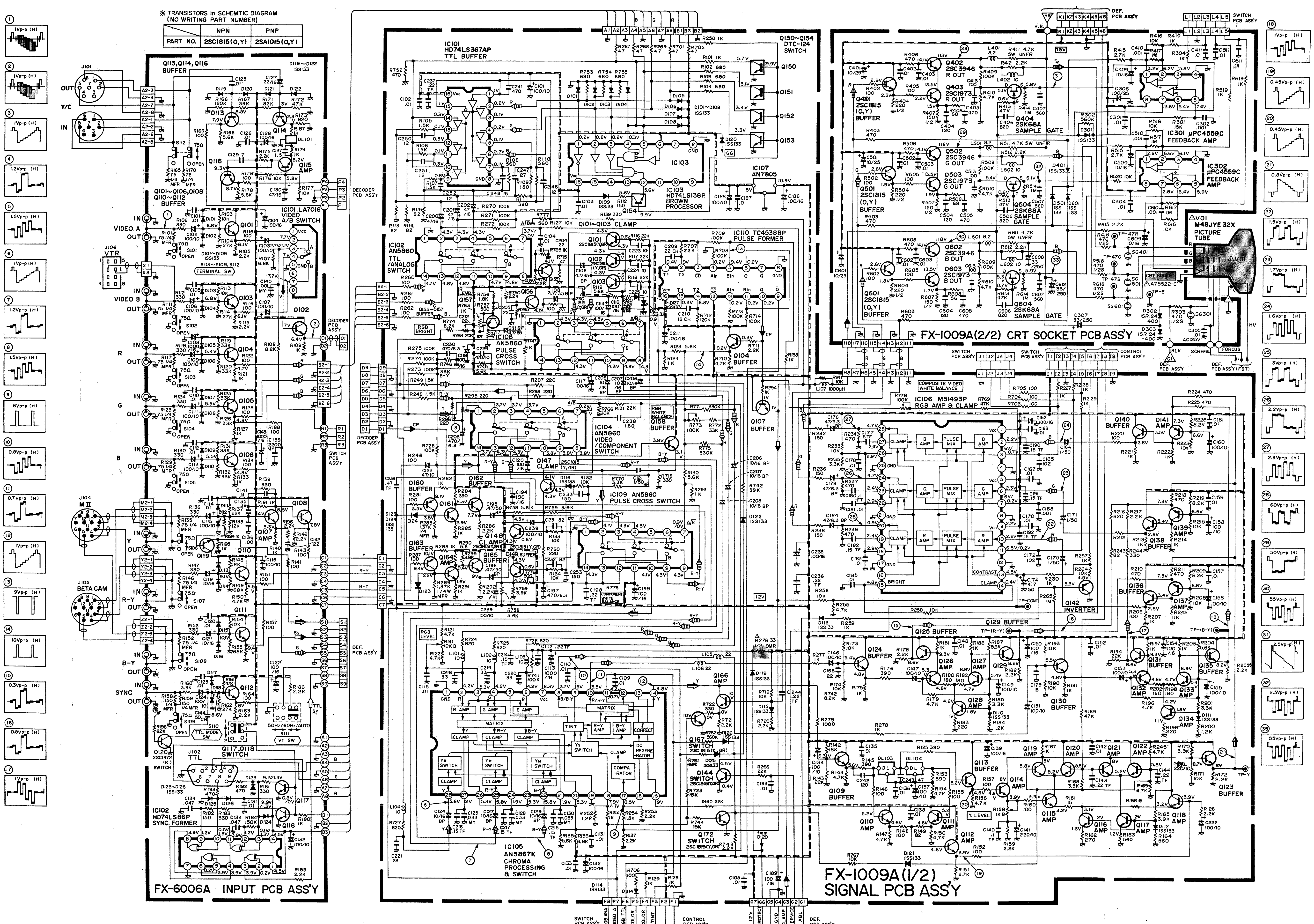
■ BASING OF TRANSISTOR AND IC


E C B
2SA1015(Y.GR)
2SC1815(Y.GR)
D G S
2SK68K
E C B
2SC2655(Y)
2SA966
2SC1973
2SC2230A
B C E
DTC-124
B C E
2SD1555
2SC3946
B C E
2SC2555
B C E
2SC1505
2SC1507(K.L)
AN7805
IN E OUT
IC
TA78012AP
1 5
IC
STR54041S
STR30110-A
1 2 3 4 5 6 7(8)
IC
AN5560
LA7016
1 7 (12)
IC
AN5521
8(9) (16) 14 7(8) 1
IC
TC4538BP
TC4051BP
TC4066BP
TC4532BP
TC4053BP
HD74LS367AP
HD74LS86P
HD74LS138P
8(15)(16) 14(28)(30) 7(14)(15) 1
IC
AN5860
AN5867K
AN5322K
9 16 18 8 17 1
IC
HA11423
5 8 4 1
IC
μPC4559C
15 28 14 1
IC
M51493P

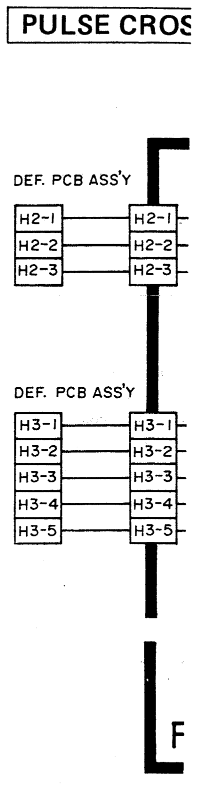
INPUT/SIGNAL/CRT SOCKET CIRCUIT

※ TRANSISTORS in SCHEMATIC DIAGRAM (NO WRITING PART NUMBER)

	NPN	PNP
PART NO.	2SC1815(O,Y)	2SA1015(O,Y)



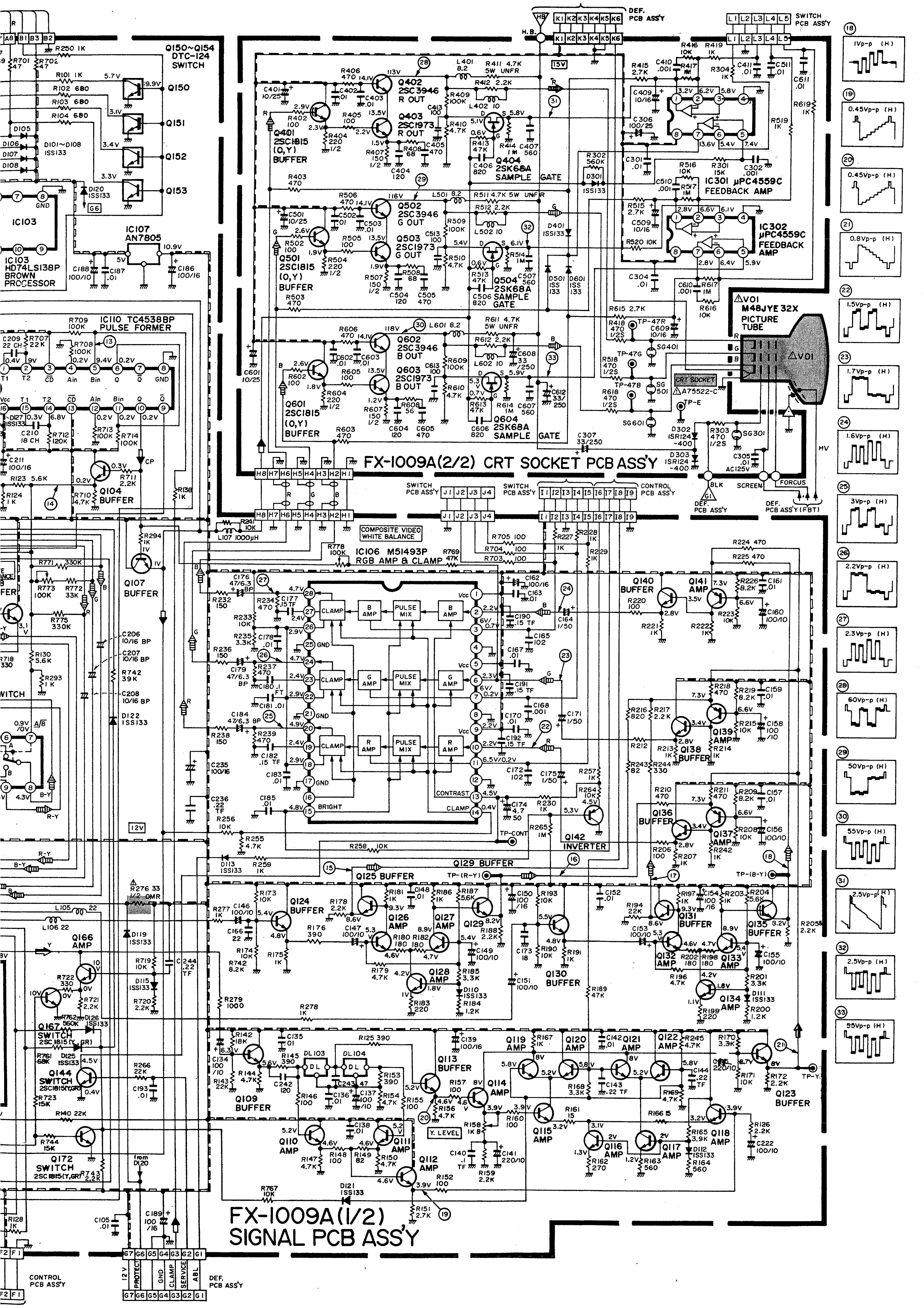
① 1Vp-p (H)
② 1Vp-p (H)
③ 1Vp-p (H)
④ 1.2Vp-p (H)
⑤ 1.5Vp-p (H)
⑥ 1Vp-p (H)
⑦ 1.2Vp-p (H)
⑧ 1.5Vp-p (H)
⑨ 6Vp-p (H)
⑩ 0.8Vp-p (H)
⑪ 0.7Vp-p (H)
⑫ 1Vp-p (H)
⑬ 9Vp-p (H)
⑭ 10Vp-p (H)
⑮ 0.3Vp-p (H)
⑯ 0.8Vp-p (H)
⑰ 1Vp-p (H)
⑱ 1Vp-p (H)
⑲ 0.45Vp-p (H)
⑳ 0.45Vp-p (H)
㉑ 0.8Vp-p (H)
㉒ 1.5Vp-p (H)
㉓ 1.7Vp-p (H)
㉔ 1.6Vp-p (H)
㉕ 3Vp-p (H)
㉖ 2.2Vp-p (H)
㉗ 2.3Vp-p (H)
㉘ 60Vp-p (H)
㉙ 50Vp-p (H)
㉚ 55Vp-p (H)
㉛ 2.5Vp-p (H)
㉜ 2.5Vp-p (H)
㉝ 55Vp-p (H)
J101
OUT
Y/C
IN
Q113,Q114,Q116 BUFFER
Q115 AMP
Q101~Q106,Q108 Q110~Q112 BUFFER
IC101 LA7016 VIDEO A/B SWITCH
TERMINAL SW
J106 VTR
VIDEO A
VIDEO B
R
G
B
J104 M II
Y
R-Y
B-Y
SYNC
J105 BETA CAM
Q107 AMP
Q119
Q120 2SC1472(K) SWITCH
Q117,Q118 SWITCH
TTL MODE SW
50Hz/60Hz/AUTO S111
V/I SW
J102 TTL
IC102 HD74LS86P SYNC. FORMER
FX-6006A INPUT PCB ASS'Y
DECODER PCB ASS'Y
SWITCH PCB ASS'Y
DEF. PCB ASS'Y
IC101 HD74LS367AP TTL BUFFER
IC102 AN5860 TTL/ANALOG SWITCH
IC103 HD74LS138P BROWN PROCESSOR
Q150~Q154 DTC-124 SWITCH
IC107 AN7805
Q101~Q103 CLAMP
IC110 TC4538BP PULSE FORMER
IC108 AN5860 PULSE CROSS SWITCH
IC104 AN5860 VIDEO/COMPONENT SWITCH
IC109 AN5860 PULSE CROSS SWITCH
Q104 BUFFER
Q107 BUFFER
Q158 BUFFER
Q147 CLAMP
Q148 CLAMP
Q160 BUFFER
Q162 BUFFER
Q163 BUFFER
Q164 BUFFER
Q165 BUFFER
RGB BRIGHT
RGB LEVEL
COMPONENT WHITE BALANCE
IC105 AN5867K CHROMA PROCESSING & SWITCH
Q166 AMP
Q167 SWITCH
Q144 SWITCH
Q172 SWITCH
IC106 M51493P RGB AMP & CLAMP
COMPOSITE VIDEO WHITE BALANCE
Q140 BUFFER
Q141 AMP
Q142 INVERTER
Q129 BUFFER
Q125 BUFFER
Q124 BUFFER
Q130 BUFFER
Q131 BUFFER
Q135 BUFFER
Q109 BUFFER
Q113 BUFFER
Q123 BUFFER
Y LEVEL
CONTRAST
BRIGHT
FX-1009A(1/2) SIGNAL PCB ASS'Y
FX-1009A(2/2) CRT SOCKET PCB ASS'Y
Q401 2SC1815 (O,Y) BUFFER
Q402 2SC3946 R OUT
Q403 2SC1973 R OUT
Q404 2SK68A SAMPLE GATE
Q501 2SC1815 (O,Y) BUFFER
Q502 2SC3946 G OUT
Q503 2SC1973 G OUT
Q504 2SK68A SAMPLE GATE
Q601 2SC1815 (O,Y) BUFFER
Q602 2SC3946 B OUT
Q603 2SC1973 B OUT
Q604 2SK68A SAMPLE GATE
IC301 μPC4559C FEEDBACK AMP
IC302 μPC4559C FEEDBACK AMP
V01 M48JYE 32X PICTURE TUBE
CRT SOCKET
HV
SCREEN
FOCUS
DEF. PCB ASS'Y (FBT)
CONTROL PCB ASS'Y
SWITCH PCB ASS'Y
12V PROTECT GND CLAMP SERVICE ABL
RGB ANA VIDEO A RGB TTL COLOR TINT



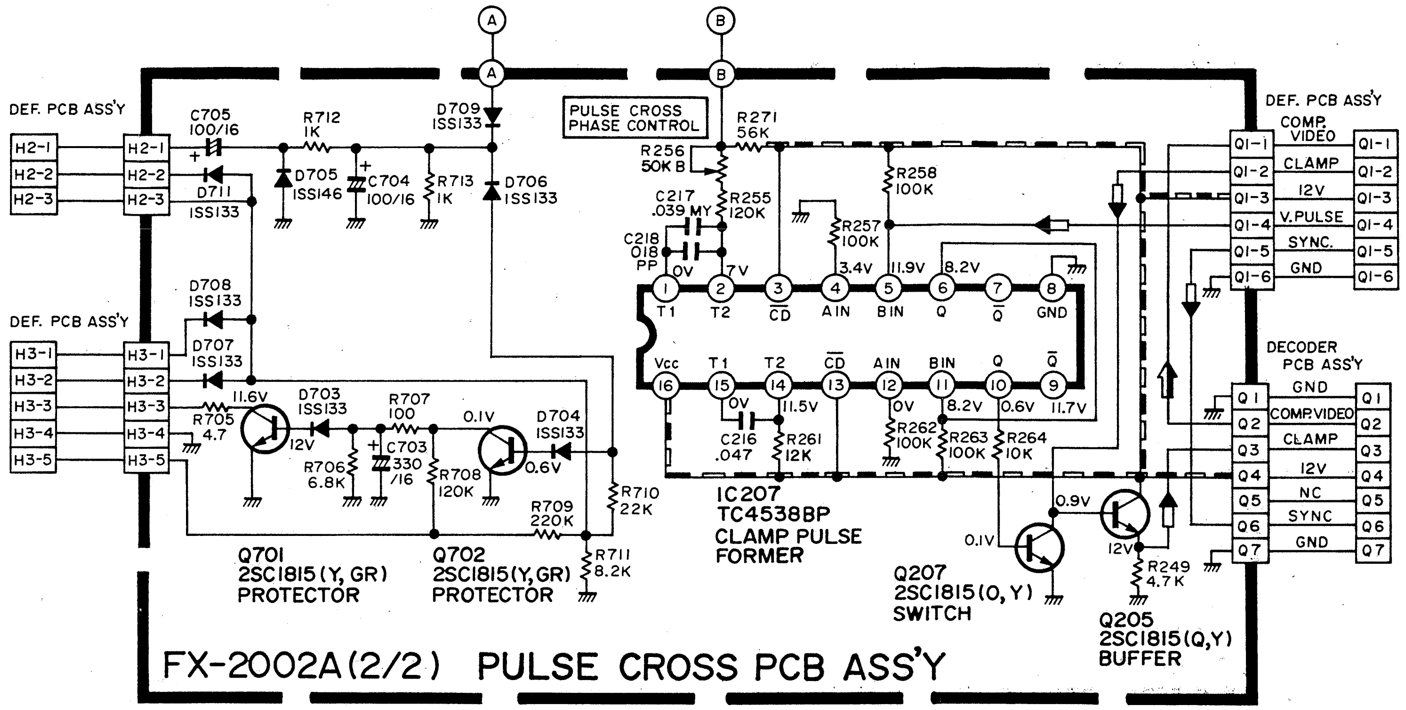
PULSE CROS
DEF. PCB ASS'Y
H2-1
H2-2
H2-3
DEF. PCB ASS'Y
H3-1
H3-2
H3-3
H3-4
H3-5
F

■ PARTS LIS

SYMBOL	PA
FX-1009A	
RESISTOR	
R1276	QRG0
OTHERS	
	A755
FX-2001A	
RESISTOR	
R2702	CJ39
CAPACITOR	
C2517	QFZ0
C2518	QFZ0
C2521	QFZ0
C2522	QFM7
C2523	QFZ0
C2524	QFM7
C2525	QFZ0
TRANSFORM	
T2502	A460
DIODE	
D2701	HZ7B
TRANSISTO	
Q2502	2SD1
OTHERS	
FR2530	QRZ0
CP2001	ICP-
FX-8006A	
OTHERS	
FR8268	QRZ0
FX-9005A	
RESISTOR	
R9951	QRD1
CAPACITOR	
C9901	QFZ9
C9902	QFZ9
C9905	QCZ9
C9906	QCZ9
C9923	QCZ9


FX-1009A(2/2) CRT SOCKET PCB ASS'Y
FX-1009A(1/2) SIGNAL PCB ASS'Y
ΔV01 M48JYE32X PICTURE TUBE
CRT SOCKET ΔA75522-C
IC106 M51493P RGB AMP & CLAMP
IC110 TC4538BP PULSE FORMER
IC103 HD74LS138P BROWN PROCESSOR
IC107 AN7805
IC301 μPC4559C FEEDBACK AMP
IC302 μPC4559C FEEDBACK AMP
Q150~Q154 DTC-124 SWITCH
Q401 2SC1815 (O,Y) BUFFER
Q402 2SC3946 R OUT
Q403 2SC1973 R OUT
Q404 2SK68A SAMPLE
Q501 2SC1815 (O,Y) BUFFER
Q502 2SC3946 G OUT
Q503 2SC1973 G OUT
Q504 2SK68A SAMPLE
Q601 2SC1815 (O,Y) BUFFER
Q602 2SC3946 B OUT
Q603 2SC1973 B OUT
Q604 2SK68A SAMPLE
Q104 BUFFER
Q107 BUFFER
Q140 BUFFER
Q141 AMP
Q142 INVERTER
Q166 AMP
Q167 SWITCH
Q144 SWITCH
Q172 SWITCH
Q109 BUFFER
Q110 AMP
Q111 AMP
Q112 AMP
Q113 BUFFER
Q114 AMP
Q119 AMP
Q120 AMP
Q121 AMP
Q122 AMP
Q123 BUFFER
Q115 AMP
Q116 AMP
Q117 AMP
Q118 AMP
Q124 BUFFER
Q125 BUFFER
Q126 AMP
Q127 AMP
Q128 AMP
Q129 BUFFER
Q130 BUFFER
Q131 BUFFER
Q132 AMP
Q133 AMP
Q134 AMP
Q135 BUFFER
Q136 BUFFER
Q137 AMP
Q138 BUFFER
Q139 AMP
COMPOSITE VIDEO WHITE BALANCE
DEF. PCB ASS'Y
SWITCH PCB ASS'Y
CONTROL PCB ASS'Y
SCREEN
FOCUS
HV
Y. LEVEL
CONTRAST
CLAMP
BRIGHT
(18) 1Vp-p (H)
(19) 0.45Vp-p (H)
(20) 0.45Vp-p (H)
(21) 0.8Vp-p (H)
(22) 1.5Vp-p (H)
(23) 1.7Vp-p (H)
(24) 1.6Vp-p (H)
(25) 3Vp-p (H)
(26) 2.2Vp-p (H)
(27) 2.3Vp-p (H)
(28) 60Vp-p (H)
(29) 50Vp-p (H)
(30) 55Vp-p (H)
(31) 2.5Vp-p (H)
(32) 2.5Vp-p (H)
(33) 55Vp-p (H)

PULSE CROSS CIRCUIT


DEF. PCB ASS'Y
H2-1
H2-2
H2-3
H3-1
H3-2
H3-3
H3-4
H3-5
C705 100/16
R712 1K
D709 1SS133
D711 1SS133
D705 1SS146
C704 100/16
R713 1K
D706 1SS133
D708 1SS133
D707 1SS133
PULSE CROSS PHASE CONTROL
R256 50K B
R271 56K
C217 .039 MY
R255 120K
C218 018 PP
R258 100K
R257 100K
IC207 TC4538BP CLAMP PULSE FORMER
R705 4.7
D703 1SS133
R707 100
D704 1SS133
C703 330 /16
R706 6.8K
R708 120K
R709 220K
R710 22K
R711 8.2K
C216 .047
R261 12K
R262 100K
R263 100K
R264 10K
R249 4.7K
Q701 2SC1815(Y, GR) PROTECTOR
Q702 2SC1815(Y, GR) PROTECTOR
Q207 2SC1815(O, Y) SWITCH
Q205 2SC1815(Q,Y) BUFFER
DEF. PCB ASS'Y
COMP. VIDEO
CLAMP
12V
V.PULSE
SYNC.
GND
DECODER PCB ASS'Y
GND
COMP. VIDEO
CLAMP
12V
NC
SYNC
GND
FX-2002A(2/2) PULSE CROSS PCB ASS'Y

■ PARTS LIST (shaded parts in the schematic diagram)

SYMBOL	PART NO.	PART NAME
FX-1009A		
RESISTOR		
R1276	QRG019J-330S	OM R
OTHERS		
	A75522-C	CRT SOCKET
FX-2001A		
RESISTOR		
R2702	CJ39622-00F	R BLOCK
CAPACITOR		
C2517	QFZ0081-1001S	MPP CAP.
C2518	QFZ0081-1501S	MPP CAP.
C2521	QFZ0081-2501S	MPP CAP.
C2522	QFM72DK-223M	M CAP.
C2523	QFZ0081-1801S	MPP CAP.
C2524	QFM72DK-104M	M CAP.
C2525	QFZ0081-2201S	MPP CAP.
TRANSFORM		
T2502	A46022-BM	H DRIVE TRANSF
DIODE		
D2701	HZ7B2LV1	ZENER DIODE
TRANSISTO		
Q2502	2SD1555	SI TRANSISTOR
OTHERS		
FR2530	QRZ0055-4R7M	F R
CP2001	ICP-F50	IC PROTECTOR
FX-8006A		
OTHERS		
FR8268	QRZ0054-180M	F R
FX-9005A		
RESISTOR		
R9951	QRD129J-474S	C R
CAPACITOR		
C9901	QFZ9022-224M	MF CAP.
C9902	QFZ9022-224M	MF CAP.
C9905	QCZ9034-472A	C CAP.
C9906	QCZ9034-472A	C CAP.
C9923	QCZ9036-102M	C CAP.

SYMBOL	PART NO.	PART NAME
CAPACITOR		
C9924	QCZ9036-471M	C CAP.
C9926	QCZ9036-102M	C CAP.
C9927	QCZ9036-471M	C CAP.
C9928	QCZ6033-472A	C CAP.
C9929	QCZ9033-472A	C CAP.
C9955	QFZ9022-224M	M CAP.
C9956	QFZ9022-104M	M CAP.
C9957	QFZ9022-224M	M CAP.
C9958	QFZ9022-224M	M CAP.
TRANSFORMER		
T9901	CE41100-00B	SW TRANSF
T9902	CE41059-00B	DRIVE TRANSF
IC		
IC9902	STR30110-A	I C
OTHERS		
F9901	QMF51E2-3R15S	FUSE
F9902	QMF51E2-2R0S	FUSE
LF9901	CE40578-00A	LINE FILTER
LF9952	CE40578-00A	LINE FILTER
FR9917	QRZ0054-100M	F R
TH9901	A76038-T	POSISTOR
OUT SIDE	OF PCB ASS'Y	
V01	M48JYE32X	PICTURE TUBE
L01	CJ39730-00B	DEG COIL
DY01	CJ27109-00A	DEF YOKE
T01	CJ27027-00B	FLYBACK TRANSF
S01	QSP4D21-C04	POWER SWITCH
S02	QSP4C11-C02	DEG SWITCH
	CE40811-00Q	NOISE FILTER
	QMP4718-200R	POWER CORD

JVC VM-R200PSN SCHEMATIC DIAGRAM

■ NOTICE

○ The voltage reading and waveform ware measured at each point with a multi-meter and an oscilloscope while receiving a video signal (color bar) through the video input terminal (A) on the monitor.
The measurements were made with each VR under the condition just after the shipment. The figures of the signal circuits may be more or less different after adjustments, so use the figures simply for reference.

Multimeter used
DC 20kΩ/V
Given figures are all DC voltages.
Sweep speed of oscilloscope
H → 20 μS/div.
V → 5 mS/div.
Others → sweep speed specified

○ Since the schematic diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

■ SAFETY

○ The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

○ As to other parts too, use designated parts to maintain safety and performance.

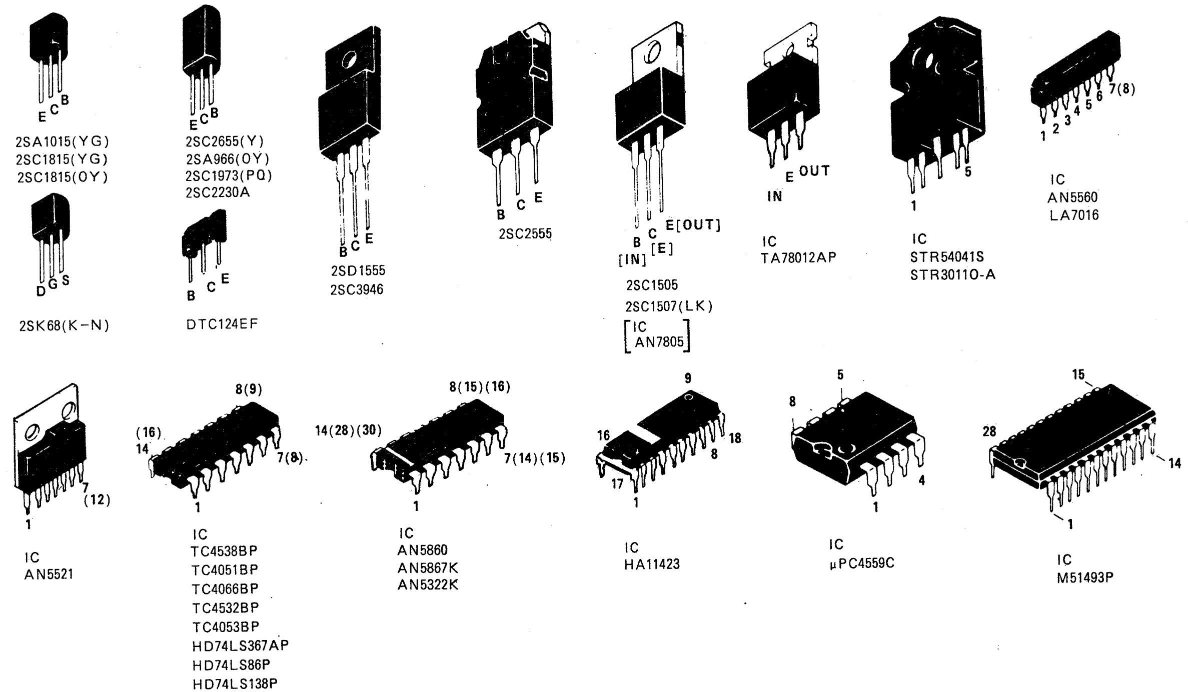
■ INDICATING METHOD OF PARTS SYMBOL NUMBERS

○ Inside board (Example) FX-1009A: R1209 → R209
○ Outside board (Example) R0001 → R01

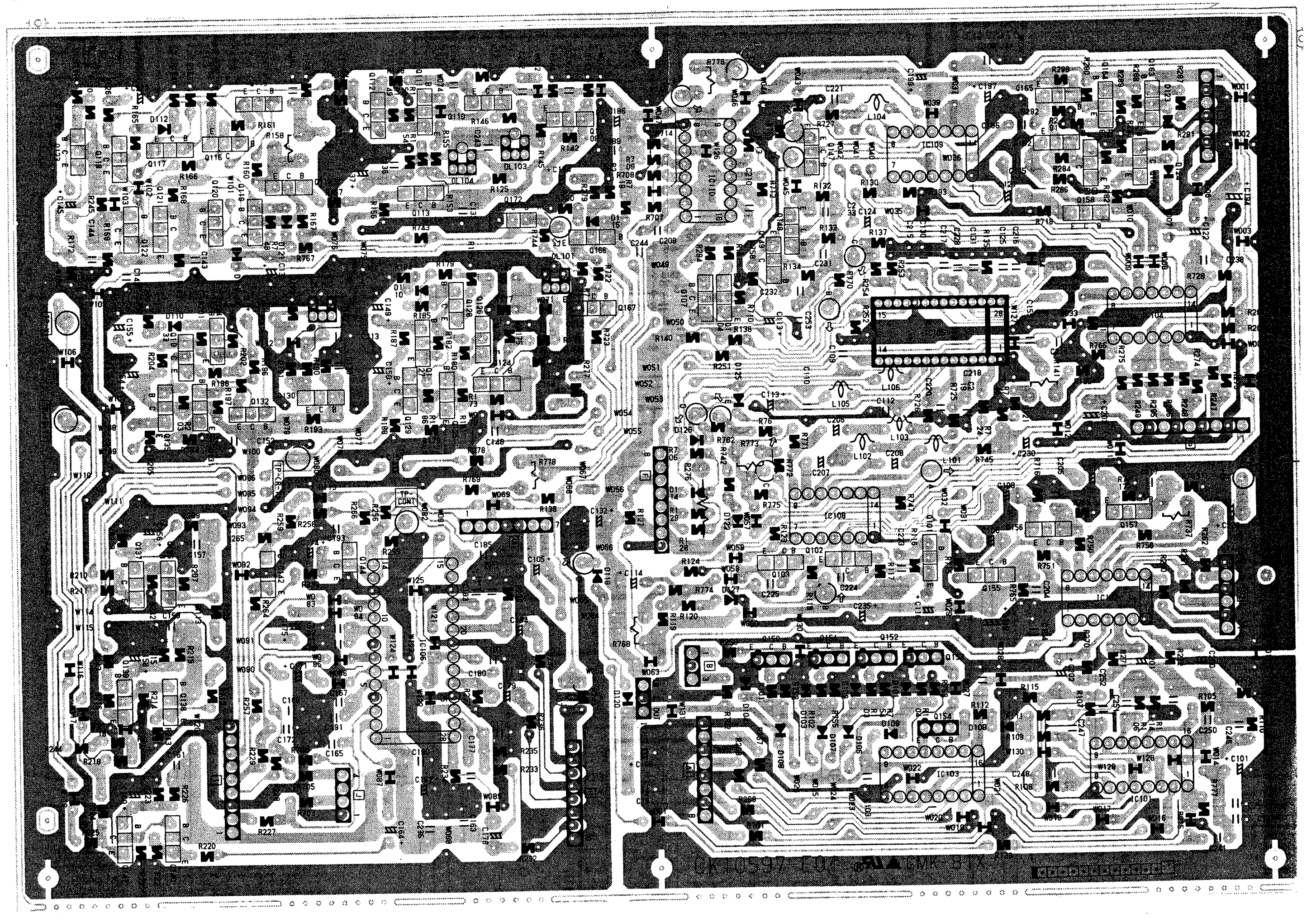
■ CIRCUIT DIAGRAM INDICATING METHOD

1. Resistor
   - ○ Resistance value
     Without unit : [Ω] K : [kΩ] M : [MΩ]
   - ○ Rated allowable power
     Without indication : 1/6W & 1/4W Others : Indicated
   - ○ Type
     Without indication : Carbon resistor
     OMR : Oxide metal film resistor
     UNF : Unflammable resistor
     CMF, MFR : Coating metal film resistor
     FR : Fusible resistor
   - * Composition resistor 1/2 [W] is indicated as 1/2S or Comp.
2. Capacitor
   - ○ Capacitance
     Above 1: [pF] Below 1: [μF]
   - ○ Withstand voltage
     Without indication : DC 50 [V]
     Others : DC withstand voltage [V]
     AC indicated : AC withstand voltage [V]
   - ○ Indications for electrolitic capacitors are as follows.
     (example) 47/50 → capacitance [μF) / pressure-tightness [V]
   - ○ Type
     Without indication : Ceramic capacitor
     MY : Mylar capacitor
     MM : Metalized mylar capacitor
     PP : Polypropylene capacitor
     MPP : Metalized polypropylene capacitor
     NP : Nonpolar electrolytic capacitor
     BP : Bipolar electrolytic capacitor
     TAN. : Tantalum capacitor
3. Coil
   Without unit : [μH]
4. Test point & GND symbol
   ⚲ : Test point by miniature GT pin,
   ⚲ : Only test point is indicated, ⏚ : EARTH GND,
   ⊥ : LIVE GND, ⏚ : NEUTRAL GND
5. Connection method
   ▭ : Connector , —≫— : Receptacle
   ○ ◯ : Wrapping or soldering
6. Power Supply (Each voltage reading specified.)
   —— : B1 Voltage(110V) ▬ ▬ ▬ : 15 V LINE
   ▬▭▬▭ : 12 V LINE

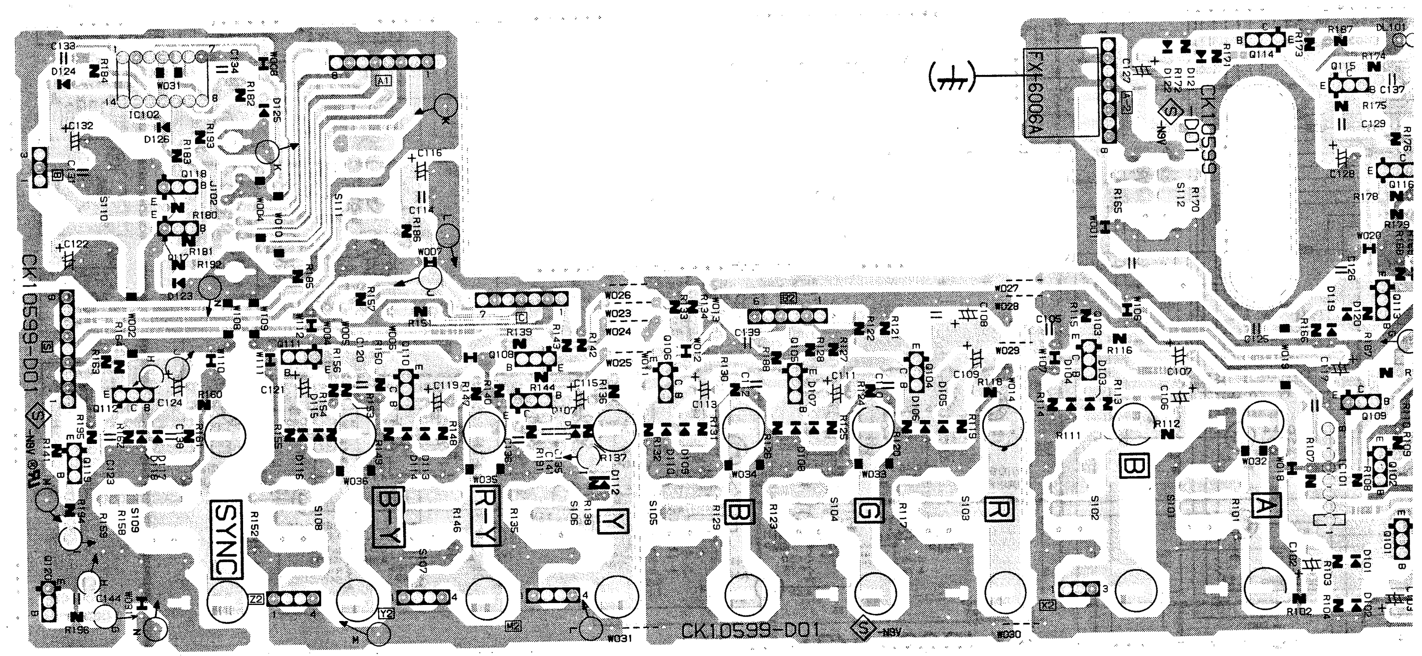
■ BASING OF TRANSISTOR AND IC


E C B
2SA1015(YG)
2SC1815(YG)
2SC1815(OY)
E C B
2SC2655(Y)
2SA966(OY)
2SC1973(PQ)
2SC2230A
B C E
2SD1555
2SC3946
B C E
2SC2555
B C E[OUT]
[IN] [E]
2SC1505
2SC1507(LK)
[IC AN7805]
IN E OUT
IC
TA78012AP
1 5
IC
STR54041S
STR30110-A
1 2 3 4 5 6 7(8)
IC
AN5560
LA7016
D G S
2SK68(K−N)
B C E
DTC124EF
1 7 (12)
IC
AN5521
(16) 14 8(9) 7(8) 1
IC
TC4538BP
TC4051BP
TC4066BP
TC4532BP
TC4053BP
HD74LS367AP
HD74LS86P
HD74LS138P
14(28)(30) 8(15)(16) 7(14)(15) 1
IC
AN5860
AN5867K
AN5322K
16 9 18 17 8 1
IC
HA11423
8 5 4 1
IC
μPC4559C
28 15 14 1
IC
M51493P

SIGNAL P.C. BOARD FX-1009A (1/2)

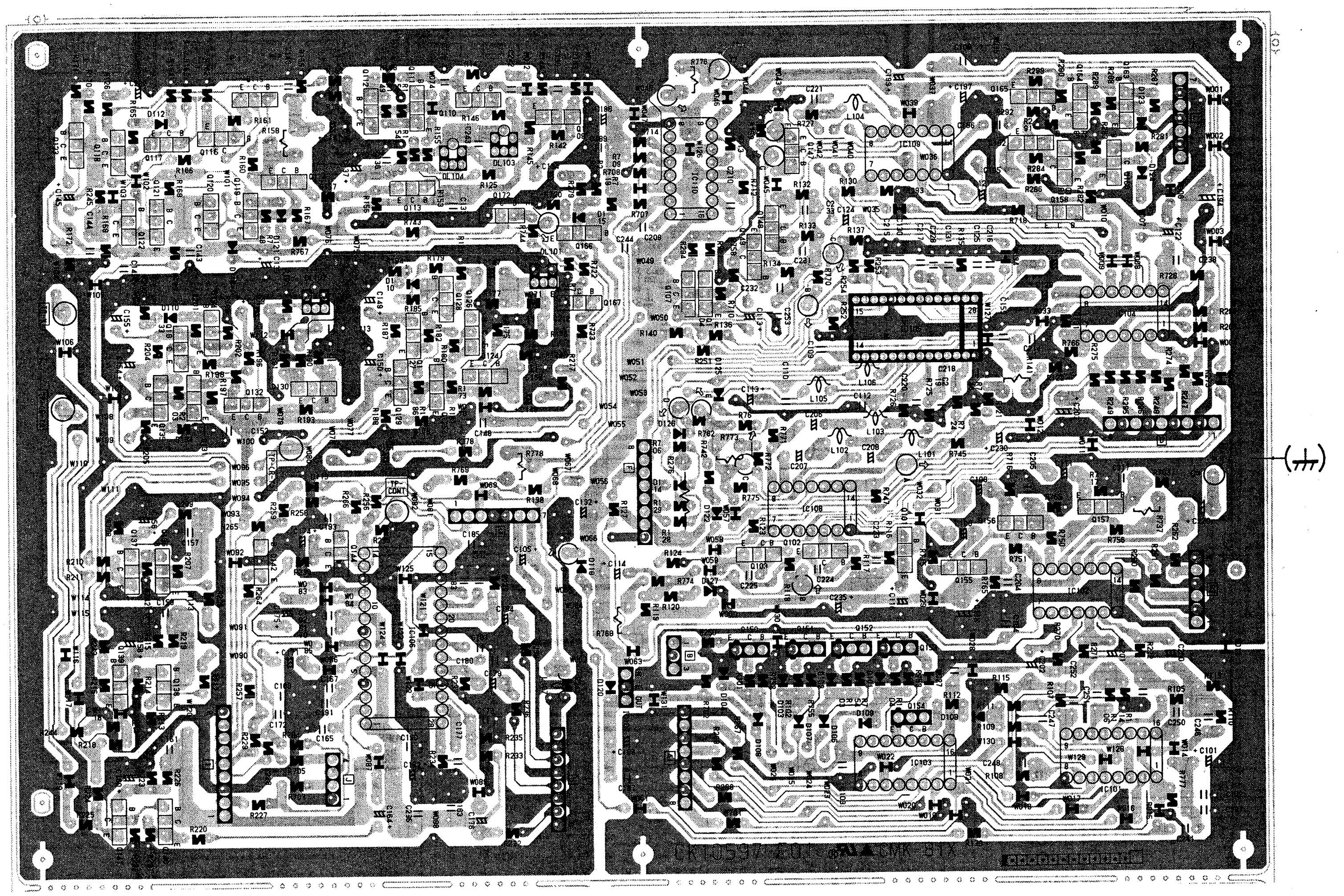


INPUT P.C. BOARD FX-6006A

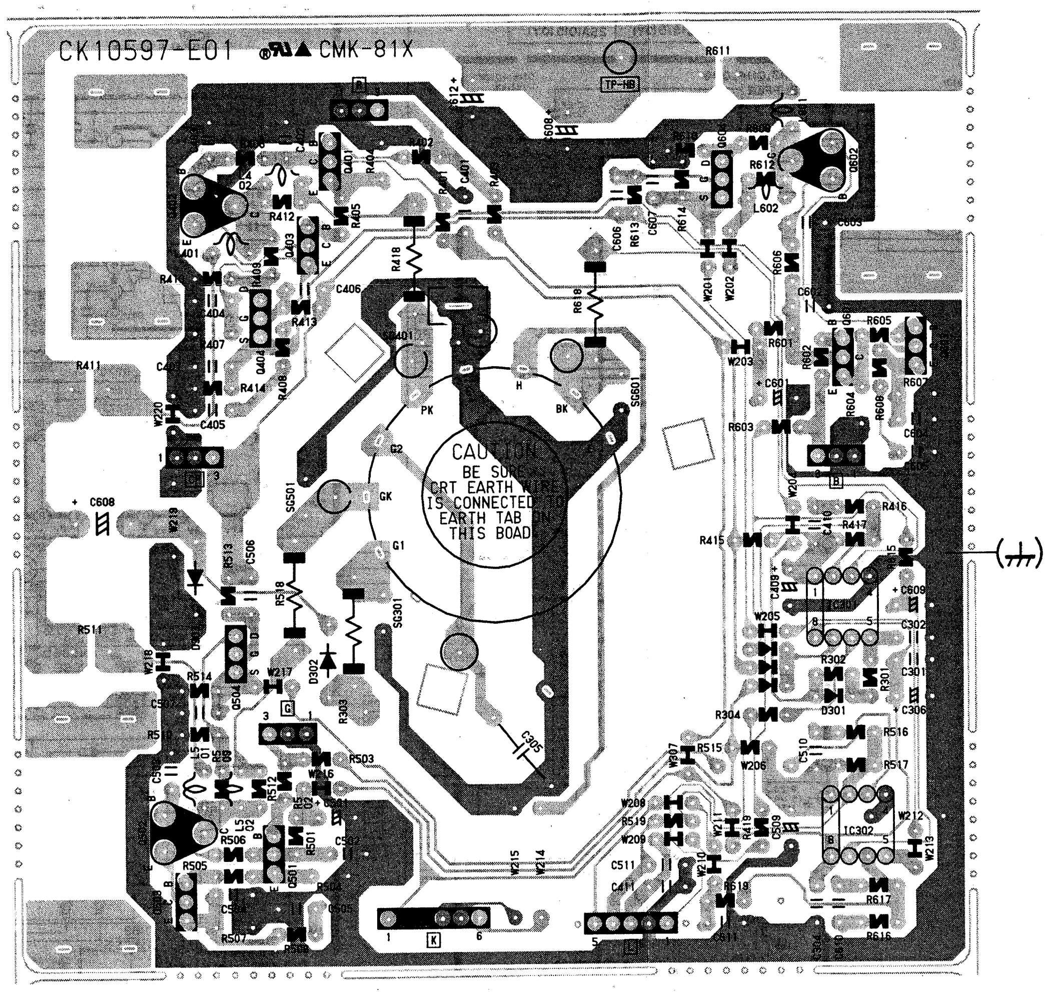

FX1006A
CK10599-D01
SYNC
B-Y
R-Y
Y
B
G
R
B
A

JVC VICTOR COMPANY OF JAPAN, Ltd.
VM-R200PSN-HS-B
021227 VP

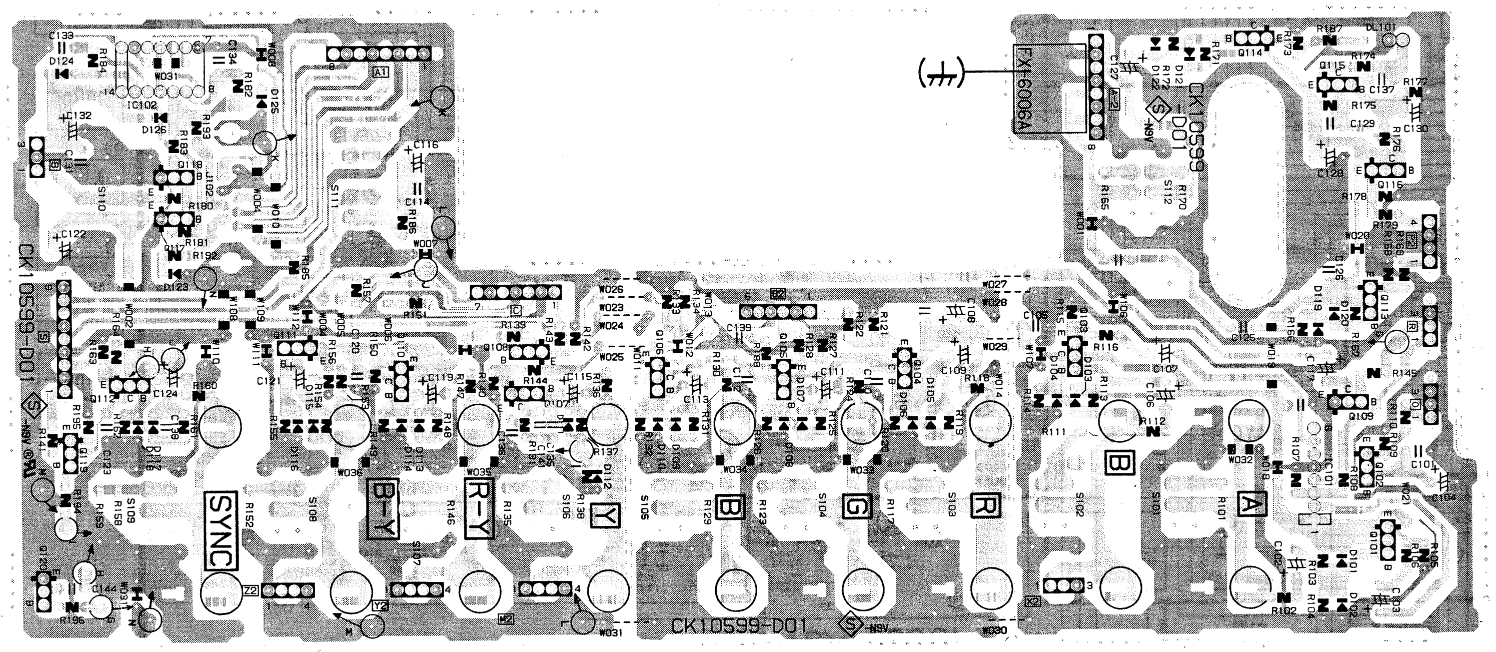
SIGNAL P.C. BOARD FX-1009A (1/2)


CK10597-E01
CMK-81X

CRT SOCKET P.C. BOARD FX-1009A (2/2)


CK10597-E01
CMK-81X
TP-HB
CAUTION
BE SURE
CRT EARTH WIRE
IS CONNECTED
EARTH TAB ON
THIS BOARD

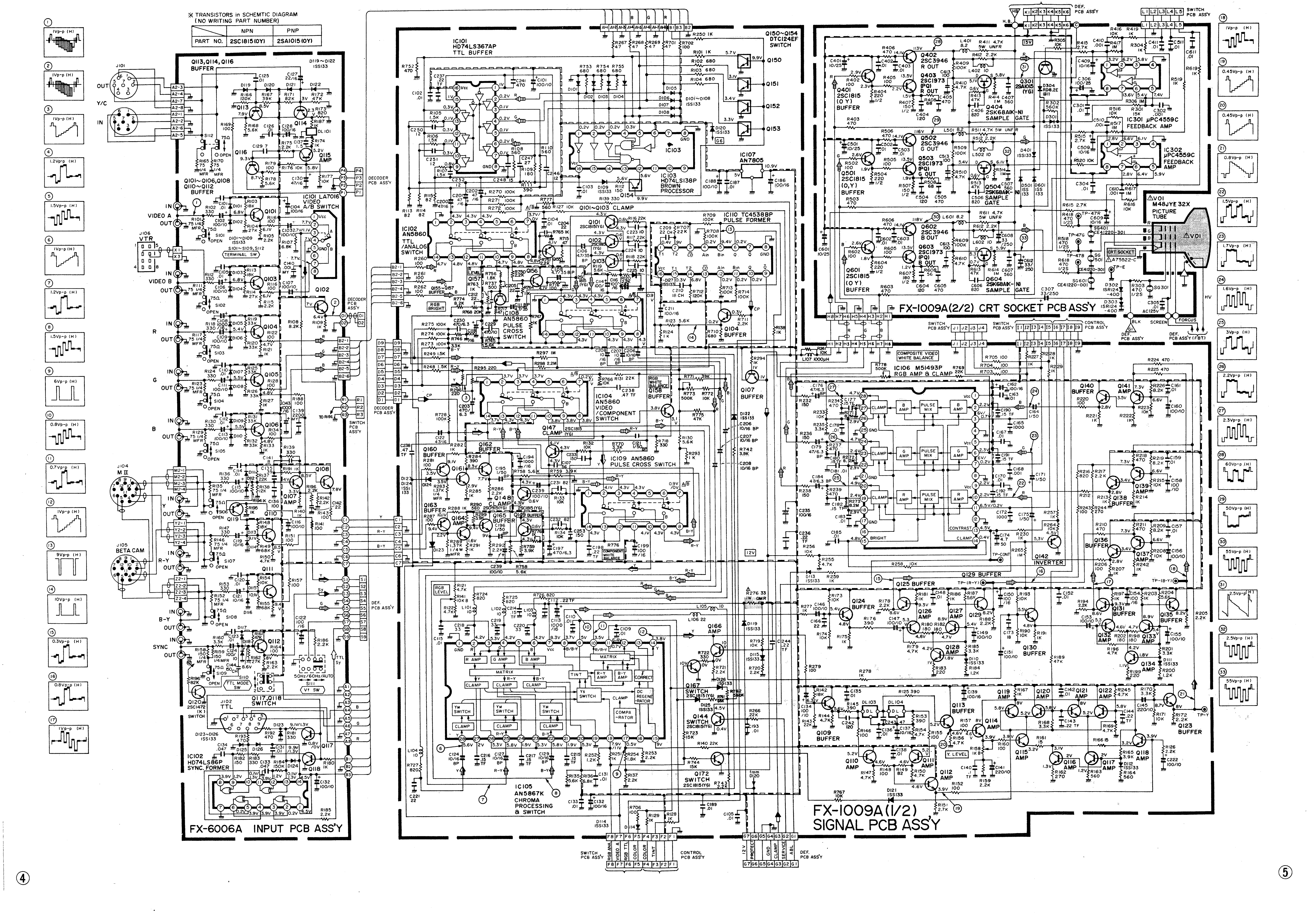
INPUT P.C. BOARD FX-6006A


FX-6006A
CK10599-D01
SYNC
B-Y
R-Y
Y
B
G
R
B
A

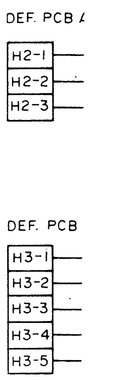
INPUT/SIGNAL/CRT SOCKET CIRCUIT

※ TRANSISTORS in SCHEMATIC DIAGRAM (NO WRITING PART NUMBER)

	NPN	PNP
PART NO.	2SC1815(OY)	2SA1015(OY)

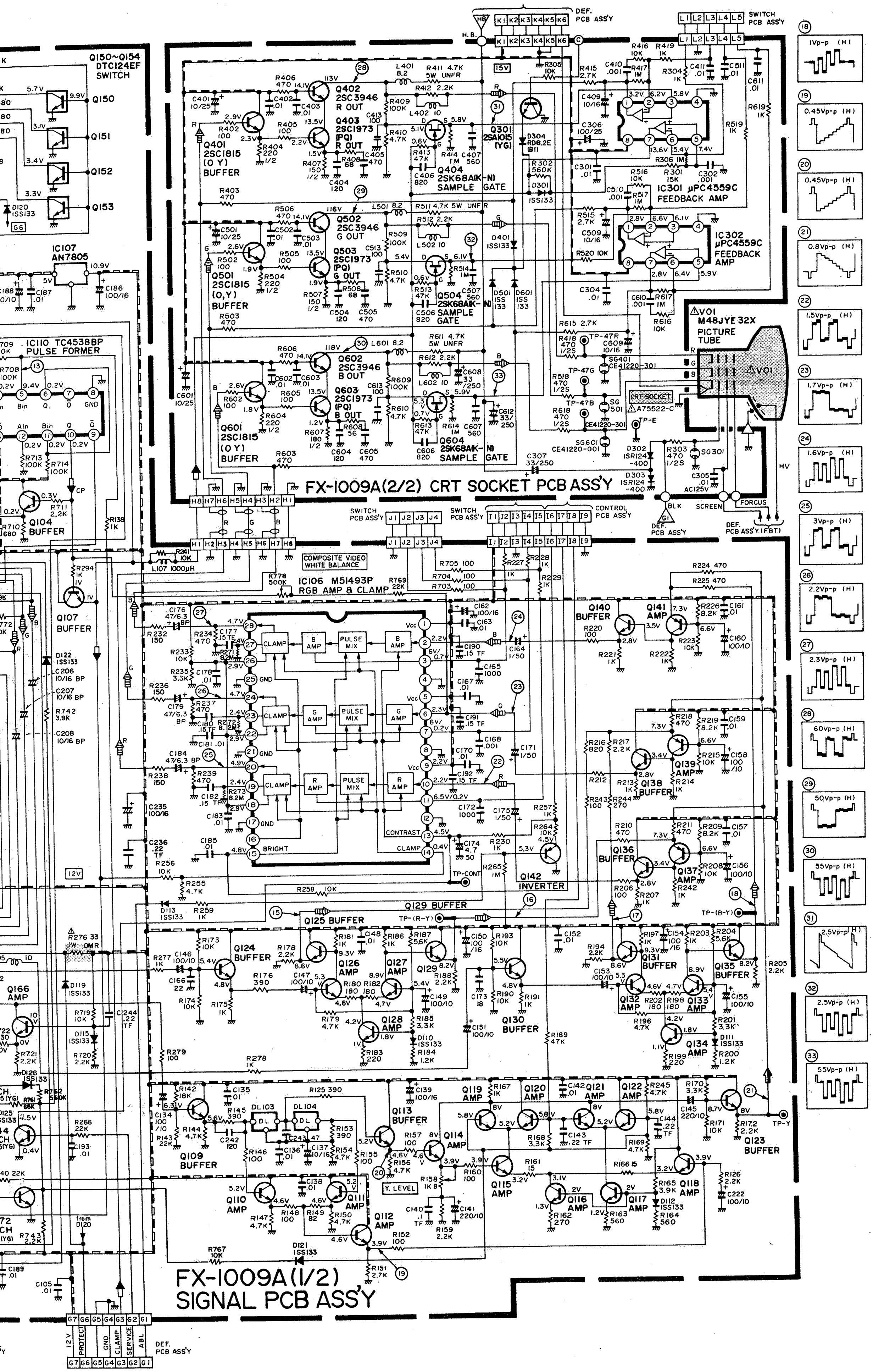

FX-6006A INPUT PCB ASS'Y
FX-1009A(1/2) SIGNAL PCB ASS'Y
FX-1009A(2/2) CRT SOCKET PCB ASS'Y
IC101 HD74LS367AP TTL BUFFER
IC103 HD74LS138P BROWN PROCESSOR
IC107 AN7805
IC101 LA7016 VIDEO A/B SWITCH
IC102 AN5860 TTL/ANALOG SWITCH
IC108 AN5860 PULSE CROSS SWITCH
IC110 TC4538BP PULSE FORMER
IC104 AN5860 VIDEO/COMPONENT SWITCH
IC109 AN5860 PULSE CROSS SWITCH
IC106 M51493P RGB AMP & CLAMP
IC105 AN5867K CHROMA PROCESSING & SWITCH
IC102 HD74LS86P SYNC. FORMER
IC301 μPC4559C FEEDBACK AMP
IC302 μPC4559C FEEDBACK AMP
Q150~Q154 DTC124EF SWITCH
△V01 M48JYE 32X PICTURE TUBE
J101 OUT Y/C IN
J106 VTR
J104 M II
J105 BETA CAM
J102 TTL
DECODER PCB ASS'Y
DEF. PCB ASS'Y
SWITCH PCB ASS'Y
CONTROL PCB ASS'Y
DEF. PCB ASS'Y (FBT)
VIDEO A, VIDEO B, R, G, B, Y, R-Y, B-Y, SYNC
① 1Vp-p (H) ② 1Vp-p (H) ③ 1Vp-p (H) ④ 1.2Vp-p (H) ⑤ 1.5Vp-p (H) ⑥ 1Vp-p (H) ⑦ 1.2Vp-p (H) ⑧ 1.5Vp-p (H) ⑨ 6Vp-p (H) ⑩ 0.8Vp-p (H) ⑪ 0.7Vp-p (H) ⑫ 1Vp-p (H) ⑬ 9Vp-p (H) ⑭ 10Vp-p (H) ⑮ 0.3Vp-p (H) ⑯ 0.8Vp-p (H) ⑰ 1Vp-p (H)
⑱ 1Vp-p (H) ⑲ 0.45Vp-p (H) ⑳ 0.45Vp-p (H) ㉑ 0.8Vp-p (H) ㉒ 1.5Vp-p (H) ㉓ 1.7Vp-p (H) ㉔ 1.6Vp-p (H) ㉕ 3Vp-p (H) ㉖ 2.2Vp-p (H) ㉗ 2.3Vp-p (H) ㉘ 60Vp-p (H) ㉙ 50Vp-p (H) ㉚ 55Vp-p (H) ㉛ 2.5Vp-p (H) ㉜ 2.5Vp-p (H) ㉝ 55Vp-p (H)

PULS

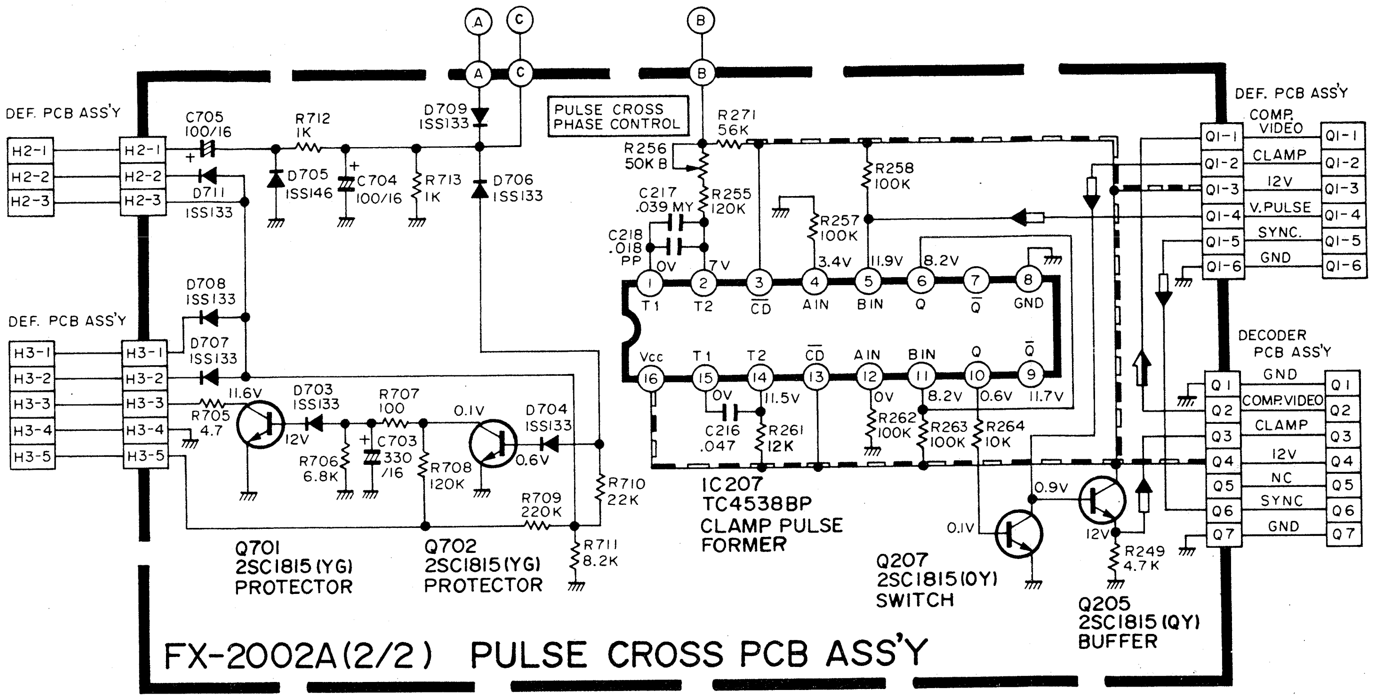

DEF. PCB
H2-1
H2-2
H2-3
DEF. PCB
H3-1
H3-2
H3-3
H3-4
H3-5

■ PAI

SYMBOL NO.
FX-1009A
R1276
OTHER
FX-2001A
RESISTO
R2702
CAPACI
C2517
C2518
C2521
C2522
C2523
C2524
C2525
TRANSF
T2502
DIODE
D2701
TRANSI
Q2502
OTHER
FR253
CP200
FX-9005A
RESISTO
R9551
CAPACI
C9901
C9902
C9905
C9906


FX-1009A(2/2) CRT SOCKET PCB ASS'Y
FX-1009A(1/2) SIGNAL PCB ASS'Y
Q150~Q154 DTC124EF SWITCH
IC107 AN7805
IC110 TC4538BP PULSE FORMER
Q401 2SC1815 (O Y) BUFFER
Q402 2SC3946 R OUT
Q403 2SC1973 (PQ) R OUT
Q404 2SK68AIK-NI SAMPLE GATE
Q301 2SA1015 (YG)
IC301 μPC4559C FEEDBACK AMP
IC302 μPC4559C FEEDBACK AMP
Q501 2SC1815 (O,Y) BUFFER
Q502 2SC3946 G OUT
Q503 2SC1973 (PQ) G OUT
Q504 2SK68AIK-NI SAMPLE GATE
Q601 2SC1815 (O Y) BUFFER
Q602 2SC3946 B OUT
Q603 2SC1973 (PQ) B OUT
Q604 2SK68AIK-NI SAMPLE GATE
ΔV01 M48JYE32X PICTURE TUBE
CRT SOCKET ΔA75522-C
IC106 M51493P RGB AMP & CLAMP
COMPOSITE VIDEO WHITE BALANCE
Q104 BUFFER
Q107 BUFFER
Q109 BUFFER
Q110 AMP
Q111 AMP
Q112 AMP
Q113 BUFFER
Q114 AMP
Q115 AMP
Q116 AMP
Q117 AMP
Q118 AMP
Q119 AMP
Q120 AMP
Q121 AMP
Q122 AMP
Q123 BUFFER
Q124 BUFFER
Q125 BUFFER
Q126 AMP
Q127 AMP
Q128 AMP
Q129 BUFFER
Q130 BUFFER
Q131 BUFFER
Q132 AMP
Q133 AMP
Q134 AMP
Q135 BUFFER
Q136 BUFFER
Q137 AMP
Q138 BUFFER
Q139 AMP
Q140 BUFFER
Q141 AMP
Q142 INVERTER
Q166 AMP
CLAMP
B AMP
G AMP
R AMP
PULSE MIX
CONTRAST
BRIGHT
Y. LEVEL
DEF. PCB ASS'Y
SWITCH PCB ASS'Y
CONTROL PCB ASS'Y
SCREEN
FOCUS
HV
12V
PROTECT
GND
CLAMP
SERVICE
ABL
⑱ 1Vp-p (H)
⑲ 0.45Vp-p (H)
⑳ 0.45Vp-p (H)
㉑ 0.8Vp-p (H)
㉒ 1.5Vp-p (H)
㉓ 1.7Vp-p (H)
㉔ 1.6Vp-p (H)
㉕ 3Vp-p (H)
㉖ 2.2Vp-p (H)
㉗ 2.3Vp-p (H)
㉘ 60Vp-p (H)
㉙ 50Vp-p (H)
㉚ 55Vp-p (H)
㉛ 2.5Vp-p (H)
㉜ 2.5Vp-p (H)
㉝ 55Vp-p (H)

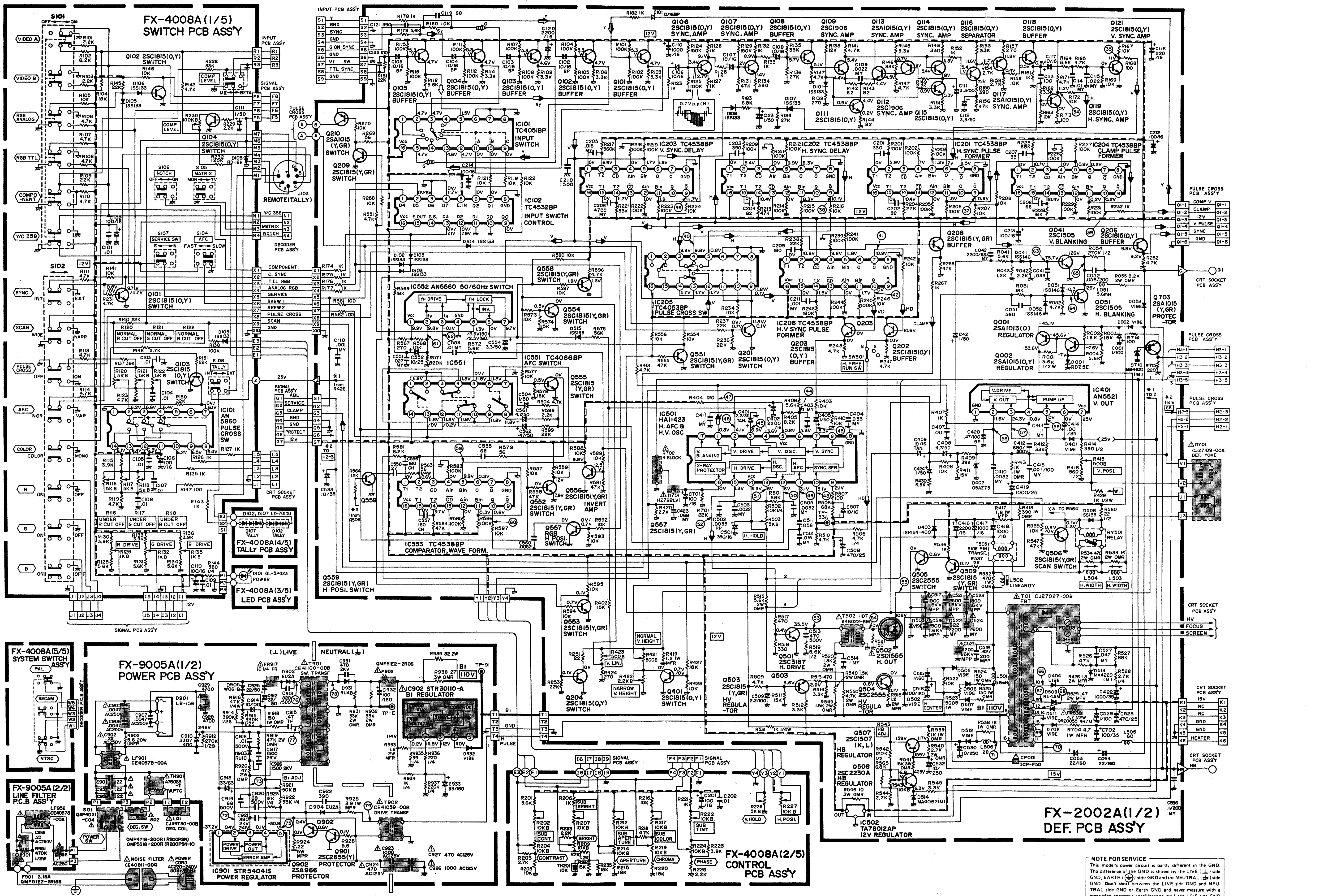
PULSE CROSS CIRCUIT


FX-2002A(2/2) PULSE CROSS PCB ASS'Y
DEF. PCB ASS'Y
H2-1
H2-2
H2-3
H3-1
H3-2
H3-3
H3-4
H3-5
PULSE CROSS PHASE CONTROL
C705 100/16
R712 1K
D709 1SS133
D711 1SS133
D705 1SS146
C704 100/16
R713 1K
D706 1SS133
R271 56K
R256 50K B
R258 100K
C217 .039 MY
R255 120K
R257 100K
C218 .018 PP
D708 1SS133
D707 1SS133
D703 1SS133
R707 100
D704 1SS133
R705 4.7
R706 6.8K
C703 330/16
R708 120K
R709 220K
R710 22K
R711 8.2K
C216 .047
R261 12K
R262 100K
R263 100K
R264 10K
R249 4.7K
T1
T2
CD
AIN
BIN
Q
GND
Vcc
IC207 TC4538BP CLAMP PULSE FORMER
Q701 2SC1815(YG) PROTECTOR
Q702 2SC1815(YG) PROTECTOR
Q207 2SC1815(OY) SWITCH
Q205 2SC1815(QY) BUFFER
DEF. PCB ASS'Y
COMP. VIDEO
CLAMP
12V
V.PULSE
SYNC.
GND
Q1-1
Q1-2
Q1-3
Q1-4
Q1-5
Q1-6
DECODER PCB ASS'Y
COMP.VIDEO
NC
SYNC
Q1
Q2
Q3
Q4
Q5
Q6
Q7

■ PARTS LIST (shaded parts in the schematic diagram)

SYMBOL NO.	PART NO.	PART NAME
FX-1009A		
R1276	QRG09J-330S	OMR
0THER		
	A75522-C	CRT SOCKET
FX-2001A		
RESISTOR		
R2702	CJ39622-00F	R BLOCK
CAPACITOR		
C2517	QFZ0081-1001S	MPP CAP.
C2518	QFZ0081-1501S	MPP CAP.
C2521	QFZ0081-2501S	MPP CAP.
C2522	QFM72DK-223M	M CAP.
C2523	QFZ0081-1801S	MPP CAP.
C2524	QFM72DK-104M	M CAP.
C2525	QFZ0081-2201S	MPP CAP.
TRANSFOMER		
T2502	A46022-BM	H DRIVE TRANSFOMER
DIODE		
D2701	HZ7B2L-C1	ZENER DIODE
TRANSISTOR		
Q2502	2SD1555-LB	SI TRANSISTOR
OTHER		
FR2530	QRZ0055-4R7M	FR
CP2001	ICP-F50	IC PROTECTOR
FX-9005A		
RESISTOR		
R9551	QRD0129J-474S	CR
CAPACITOR		
C9901	QFZ9022-224M	MF CAP.
C9902	QFZ9022-224M	MF CAP.
C9905	QCZ9034-472A	C CAP.
C9906	QCZ9034-472A	C CAP.
C9923	QCZ9036-102M	C CAP.
C9924	QCZ9036-471M	C CAP.
C9926	QCZ9036-102M	C CAP.
C9927	QCZ9036-471M	C CAP.
C9928	QCZ9036-472M	C CAP.
C9929	QCZ9036-472M	C CAP.
C9955	QFZ9022-224M	M CAP.
C9956	QFZ9022-104M	M CAP.
C9957	QFZ9022-224M	M CAP.
C9958	QFZ9022-224M	M CAP.
TRANSFOMER		
T9901	CE41100-00B	SW TRANSFOMER
T9902	CE41059-00B	DRAIVE TRANSFOMER
IC		
IC9902	STR30110-A	IC
OTHER		
F9901	QMF51E2-3R15S	FUSE
F9902	QMF51E2-2R0S	FUSE
LF9901	CE40578-00A	LINE FILTER
LF9952	CE40578-00A	LINE FILTER
FR9917	QRZ0054-100M	FR
TH9901	A76038-T	POSISTOR
OUT SIDE OF PCB ASS'Y		
V01	M48JYE32X	PICTURE TUBE
L01	CJ39730-00B	DEG COIL
DY01	CJ27109-00A	DEF YOKE
T01	CJ27027-00B	FLYBACK TRANSFOMER
S01	QSP4D21-C04	POWER SWITCH
S02	QSP4C11-C02	DEG SWITCH
	CE40811-00Q	NOISE FILTER
	QMP4908-200R	POWER CORD

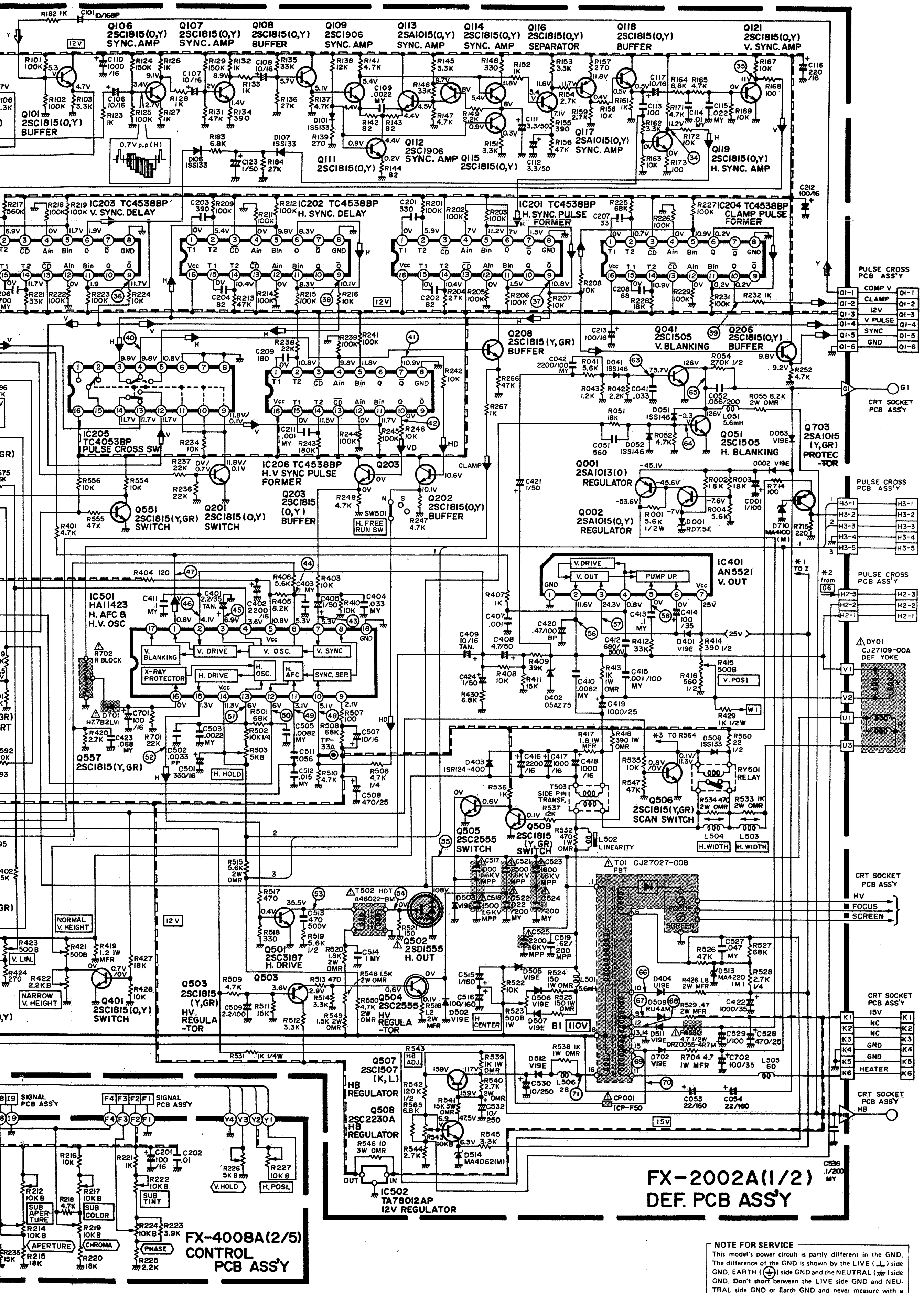
SWITCH, CONTROL/DEF/POWER CIRCUIT

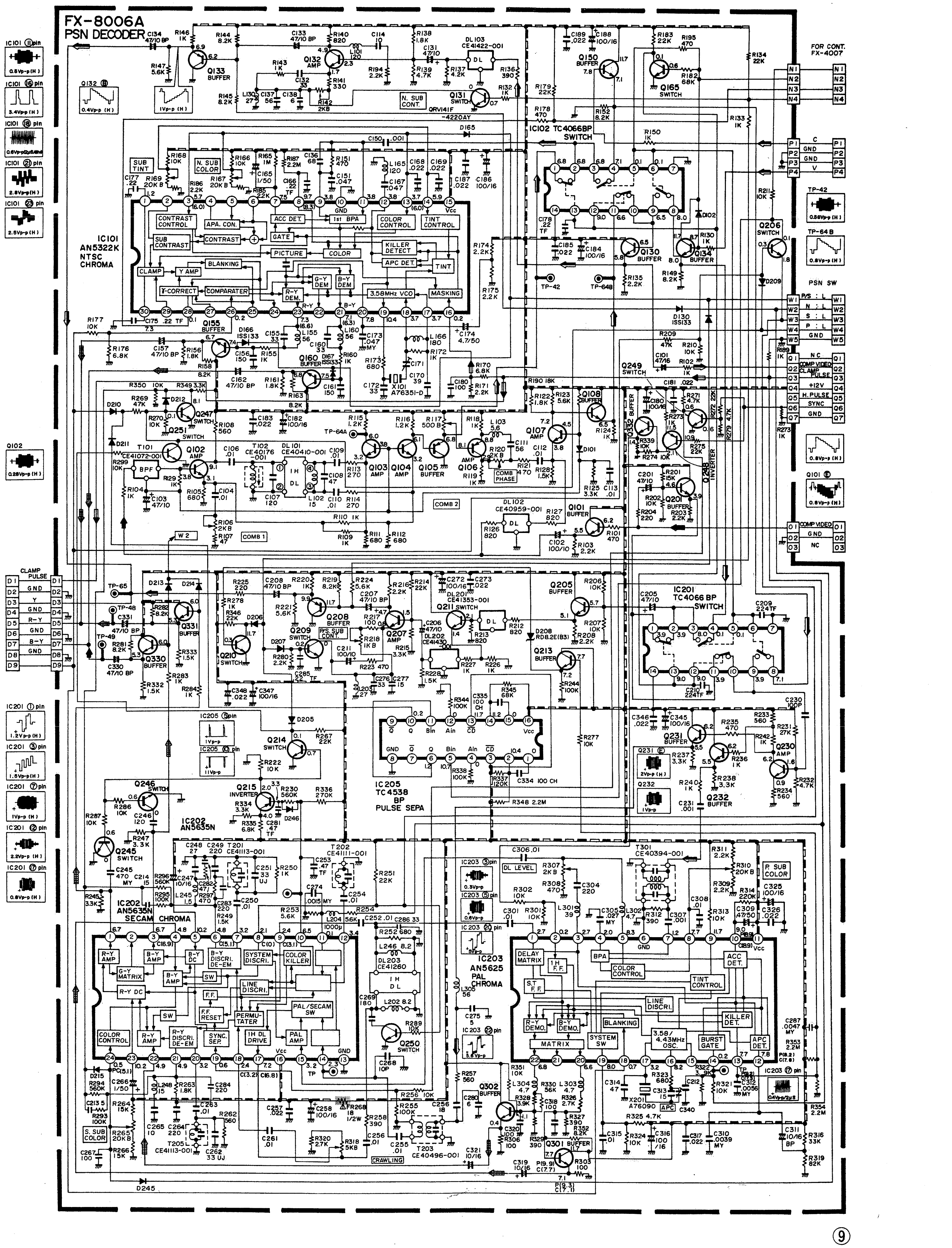

FX-4008A(1/5) SWITCH PCB ASS'Y
FX-4008A(4/5) TALLY PCB ASS'Y
FX-4008A(3/5) LED PCB ASS'Y
FX-4008A(5/5) SYSTEM SWITCH ASS'Y
FX-9005A(1/2) POWER PCB ASS'Y
FX-9005A(2/2) LINE FILTER P.C.B ASS'Y
FX-4008A(2/5) CONTROL PCB ASS'Y
FX-2002A(1/2) DEF. PCB ASS'Y
INPUT PCB ASS'Y
SIGNAL PCB ASS'Y
PULSE CROSS PCB ASS'Y
CRT SOCKET PCB ASS'Y
REMOTE(TALLY)
IC101 TC4051BP INPUT SWITCH
IC102 TC4532BP INPUT SWITCH CONTROL
IC101 AN5860 PULSE CROSS SW
IC201 TC4538BP H. SYNC. PULSE FORMER
IC202 TC4538BP H. SYNC. DELAY
IC203 TC4538BP V. SYNC. DELAY
IC204 TC4538BP CLAMP PULSE FORMER
IC205 TC4053BP PULSE CROSS SW
IC206 TC4538BP H.V SYNC PULSE FORMER
IC552 AN5560 50/60Hz SWITCH
IC551 TC4066BP AFC SWITCH
IC553 TC4538BP COMPARATOR,WAVE FORM.
IC501 HA11423 H. AFC & H.V. OSC
IC401 AN5521 V. OUT
IC502 TA78012AP 12V REGULATOR
IC901 STR5404IS POWER REGULATOR
IC902 STR30110-A B1 REGULATOR
T01 CJ27027-00B FBT
DY01 CJ27109-00A DEF. YOKE
T901 CE41100-00B SW. TRANSF
T902 CE41059-00B DRIVE TRANSF
T502 HDT A46022-BM
LF901 CE40578-00A
LF952 CE40578-00A
L01 CJ39730-00B DEG. COIL
F901 3.15A QMF51E2-3R15S
NOISE FILTER CE40811-000
POWER CORD AC220-240V 50Hz
TH901 A76038-T W.PTC
QMP4718-200R (R200PSN)
QMP5518-200R (R200PSN-K)
(⊥)LIVE
NEUTRAL (⏚)
B1 110V
TP-91
S101
S102
VIDEO A
VIDEO B
RGB ANALOG
RGB TTL
COMPO-NENT
Y/C 358
SYNC
SCAN
PULSE CROSS
AFC
COLOR
R
G
B
PAL
SECAM
NTSC
POWER SW
DEG.SW
H. WIDTH
LINEARITY
V. POSI
H. POSI.
V.HOLD
H. HOLD
NORMAL V. HEIGHT
NARROW V. HEIGHT
V. LIN.
HV ADJ
B1 ADJ
SUB BRIGHT
SUB CONT.
CONTRAST
BRIGHT
SUB APERTURE
APERTURE
SUB COLOR
CHROMA
SUB TINT
TINT
PHASE
H. FREE RUN SW
FOCUS
SCREEN
HV
RY501 RELAY
HEATER
CP001 ICP-F50
⑦ ⑧

NOTE FOR SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⊥) side GND, EARTH (⏚) side GND and the NEUTRAL (⏚) side GND. **Don't short** between the LIVE side GND and NEUTRAL side GND or Earth GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND or Earth GND at the same time.

If above note will not be kept, a fuse or any parts will be broken.


FX-2002A(1/2)
DEF. PCB ASS'Y
FX-4008A(2/5)
CONTROL
PCB ASS'Y
IC201 TC4538BP H. SYNC. PULSE FORMER
IC203 TC4538BP V. SYNC. DELAY
IC202 TC4538BP H. SYNC. DELAY
IC204 TC4538BP CLAMP PULSE FORMER
IC205 TC4053BP PULSE CROSS SW
IC206 TC4538BP H. V SYNC PULSE FORMER
IC401 AN5521 V. OUT
IC501 HA11423 H. AFC & H.V. OSC
IC502 TA7812AP 12V REGULATOR
Q001 2SA1013(0) REGULATOR
Q002 2SA1015(0,Y) REGULATOR
Q501 2SC3187 H. DRIVE
Q502 2SD1555 H. OUT
Q503 2SC1815(Y,GR) HV REGULA-TOR
Q504 2SC2555 HV REGULA-TOR
Q505 2SC2555 SWITCH
Q506 2SC1815(Y,GR) SCAN SWITCH
Q507 2SC1507(K,L) HB REGULATOR
Q508 2SC2230A HB REGULATOR
T501 CJ27027-008 FBT
PULSE CROSS PCB ASS'Y
CRT SOCKET PCB ASS'Y
DY01 CJ27109-00A DEF. YOKE
SIGNAL PCB ASS'Y

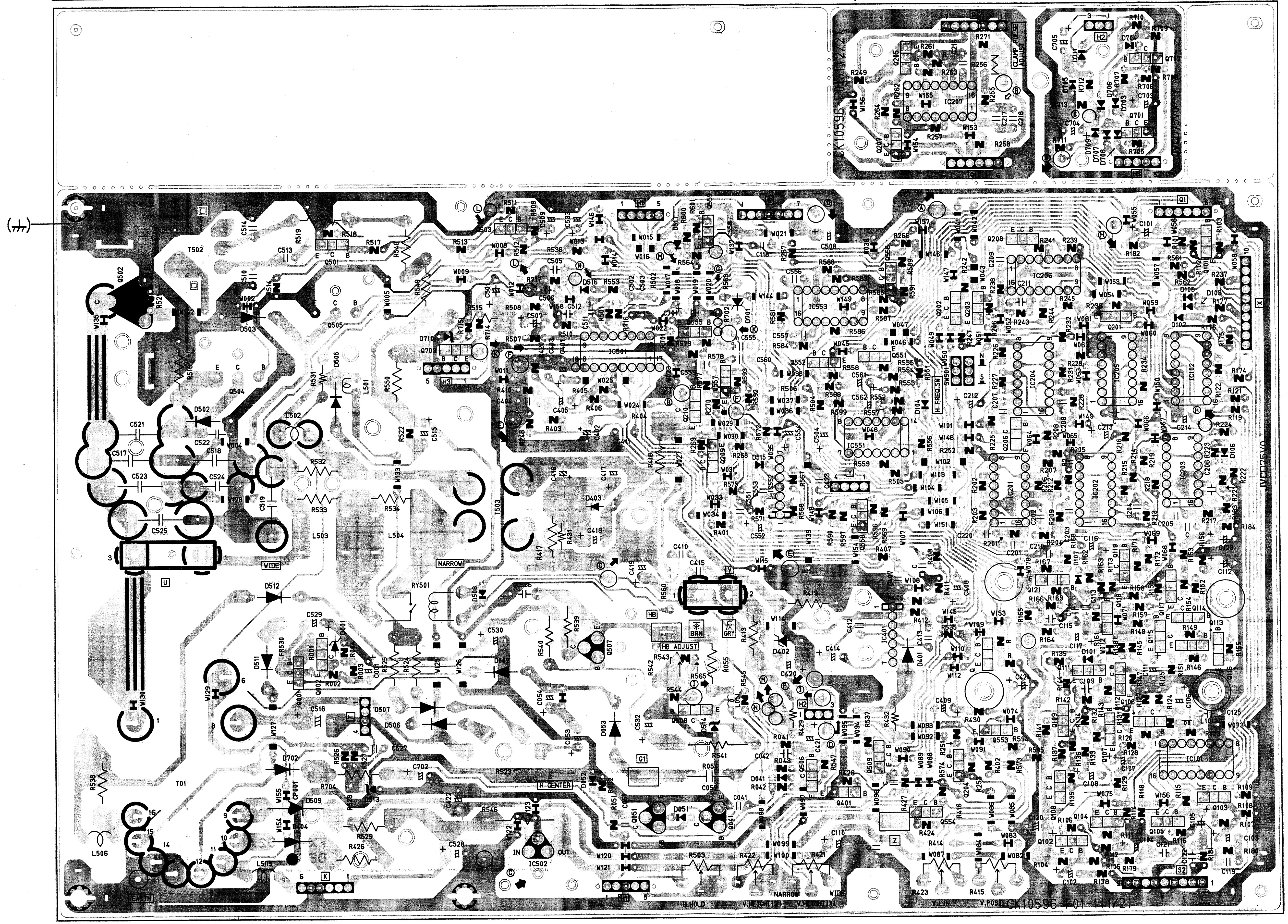

FX-8006A
PSN DECODER
IC101 AN5322K NTSC CHROMA
IC102 TC4066BP SWITCH
IC201 TC4066 BP SWITCH
IC202 AN5635N SECAM CHROMA
IC203 AN5625 PAL CHROMA
IC205 TC4538 BP PULSE SEPA
FOR CONT. FX-4007
PSN SW
CLAMP PULSE

DECODER CIRCUIT

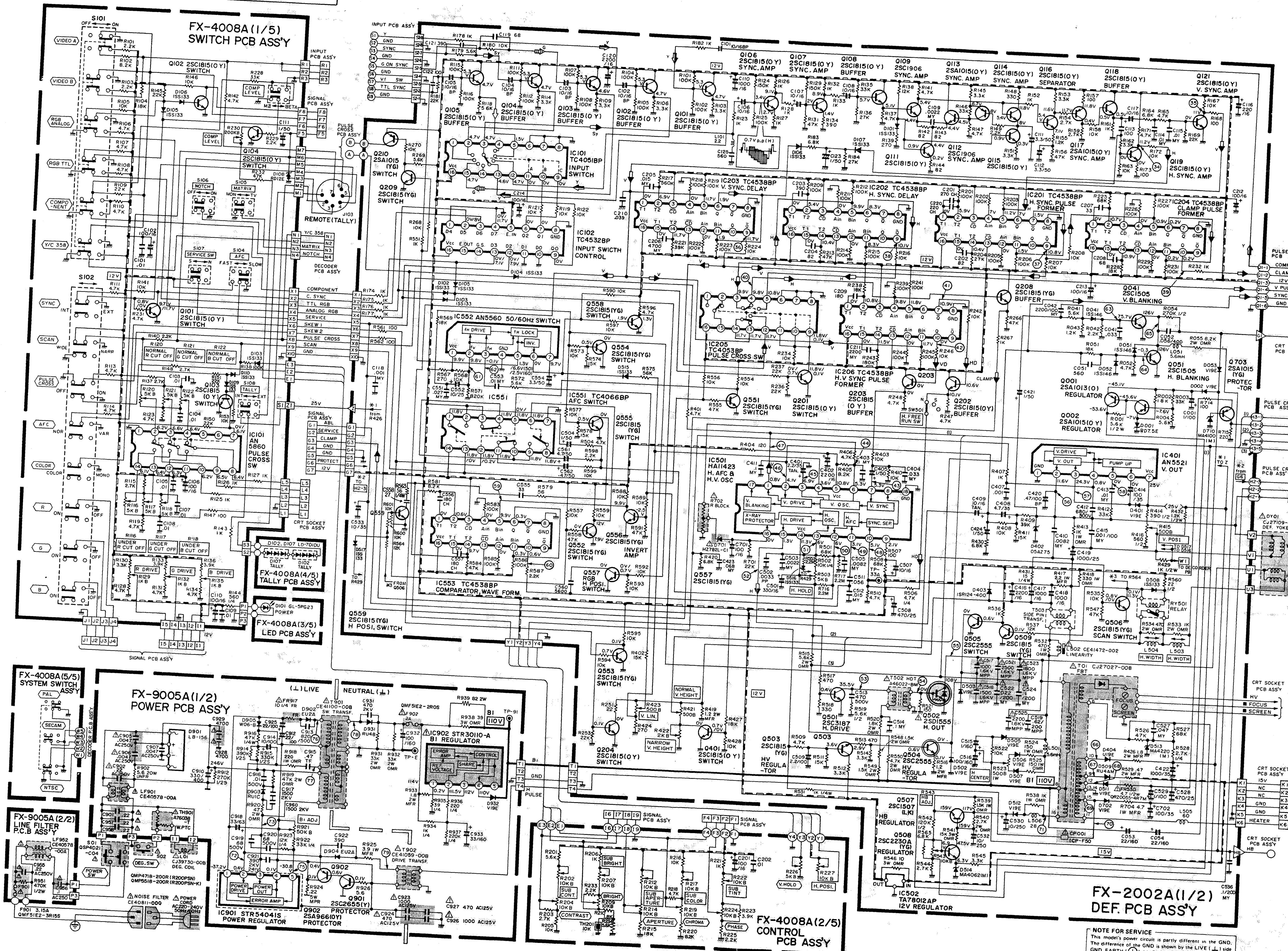
NOTE FOR SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⊥) side GND, EARTH (⏚) side GND and the NEUTRAL (⫨) side GND. **Don't short** between the LIVE side GND and NEUTRAL side GND or Earth GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND or Earth GND at the same time.
If above note will not be kept, a fuse or any parts will be broken.

DEF P.C. BOARD **FX-2002A**

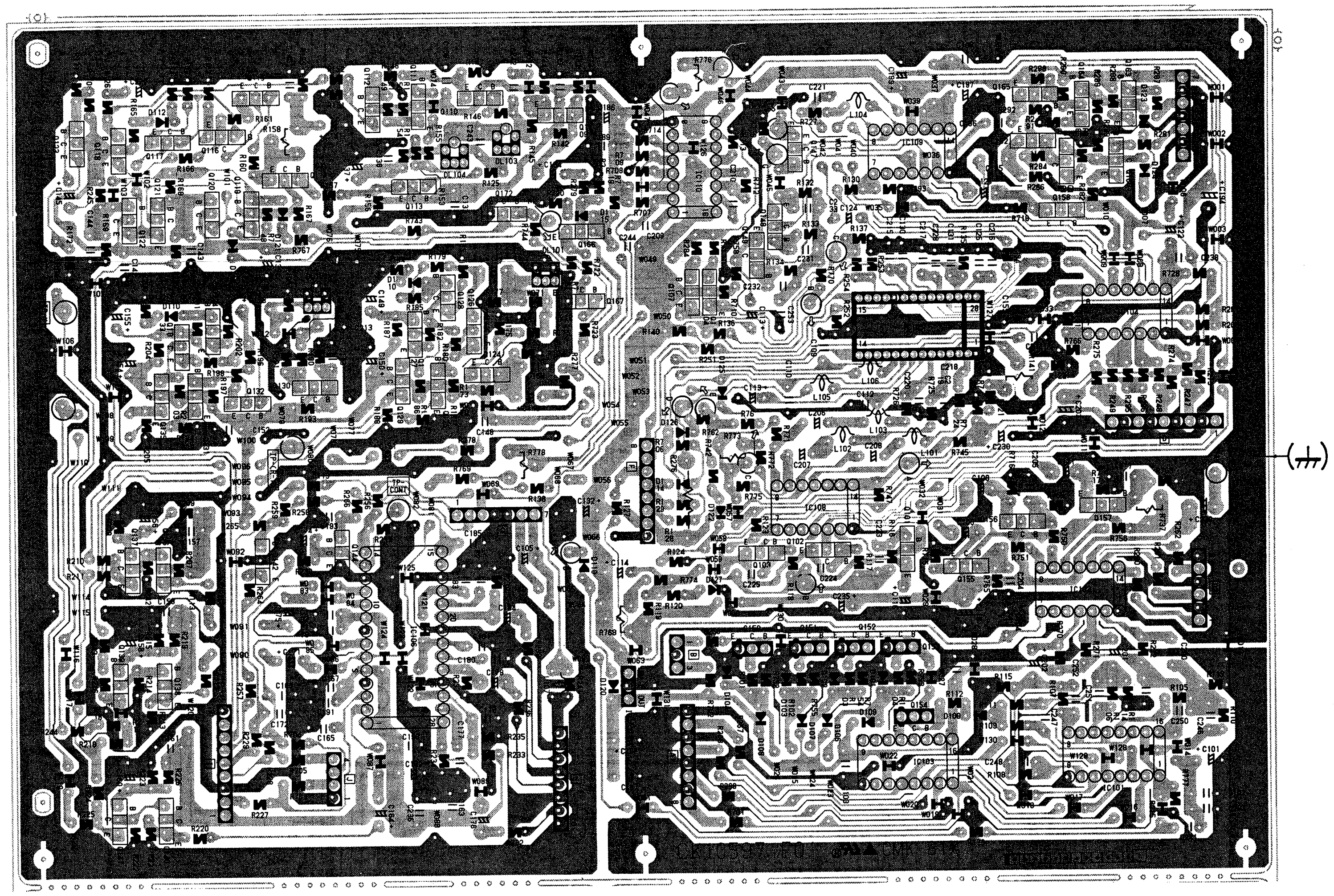

WIDE
NARROW
RY501
HB ADJUST
BRN
GRY
H CENTER
EARTH
IN
OUT
IC502
T502
T503
T01
L501
L502
L503
L504
L505
L506
H FREQ.SW
H.HOLD
V.HEIGHT(2)
V.HEIGHT(1)
V.LIN
V.POST
CK10596-F01-1(1/2)
JWFD75V0
IC501
IC401
IC553
IC551
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC101
IC102

SWITCH, CONTROL/DEF/POWER CIRCUIT

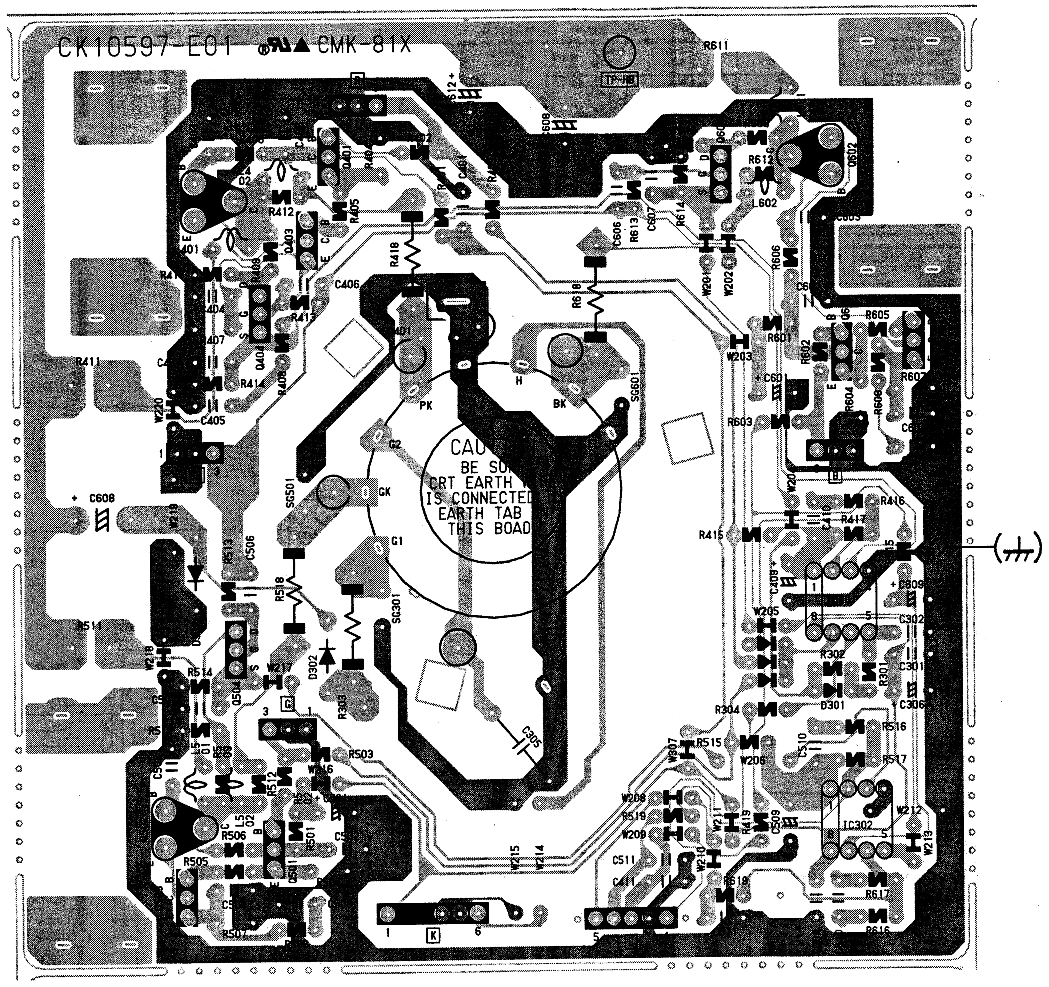

FX-4008A(1/5)
SWITCH PCB ASS'Y
S101
S102
VIDEO A
VIDEO B
RGB ANALOG
RGB TTL
COMPO-NENT
Y/C 358
SYNC
SCAN
PULSE CROSS
AFC
COLOR
R
G
B
REMOTE (TALLY)
IC101 AN5860 PULSE CROSS SW
FX-4008A(4/5) TALLY PCB ASS'Y
FX-4008A(3/5) LED PCB ASS'Y
INPUT PCB ASS'Y
SIGNAL PCB ASS'Y
IC101 TC4051BP INPUT SWITCH
IC102 TC4532BP INPUT SWITCH CONTROL
IC203 TC4538BP V. SYNC. DELAY
IC202 TC4538BP H. SYNC. DELAY
IC201 TC4538BP H. SYNC. PULSE FORMER
IC204 TC4538BP CLAMP PULSE FORMER
IC205 TC4053BP PULSE CROSS SW
IC206 TC4538BP H.V SYNC PULSE FORMER
IC552 AN5560 50/60Hz SWITCH
IC551 TC4066BP AFC SWITCH
IC553 TC4538BP COMPARATOR, WAVE FORM
IC501 HA11423 H. AFC & H.V. OSC
IC401 AN5521 V. OUT
IC502 TA78012AP 12V REGULATOR
PULSE CROSS PCB ASS'Y
CRT SOCKET PCB ASS'Y
FX-4008A(5/5) SYSTEM SWITCH ASS'Y
FX-9005A(1/2) POWER PCB ASS'Y
FX-9005A(2/2) LINE FILTER P.C.B ASS'Y
IC901 STR54041S POWER REGULATOR
IC902 STR30110-A B1 REGULATOR
FX-4008A(2/5) CONTROL PCB ASS'Y
FX-2002A(1/2) DEF. PCB ASS'Y

NOTE FOR SERVICE
This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⊥) side GND, EARTH (⏚) side GND and the NEUTRAL (⊥) side GND. **Don't short** between the LIVE side GND and NEUTRAL side GND or Earth GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND or Earth GND at the same time. If above note will not be kept, a fuse or any parts will be broken.

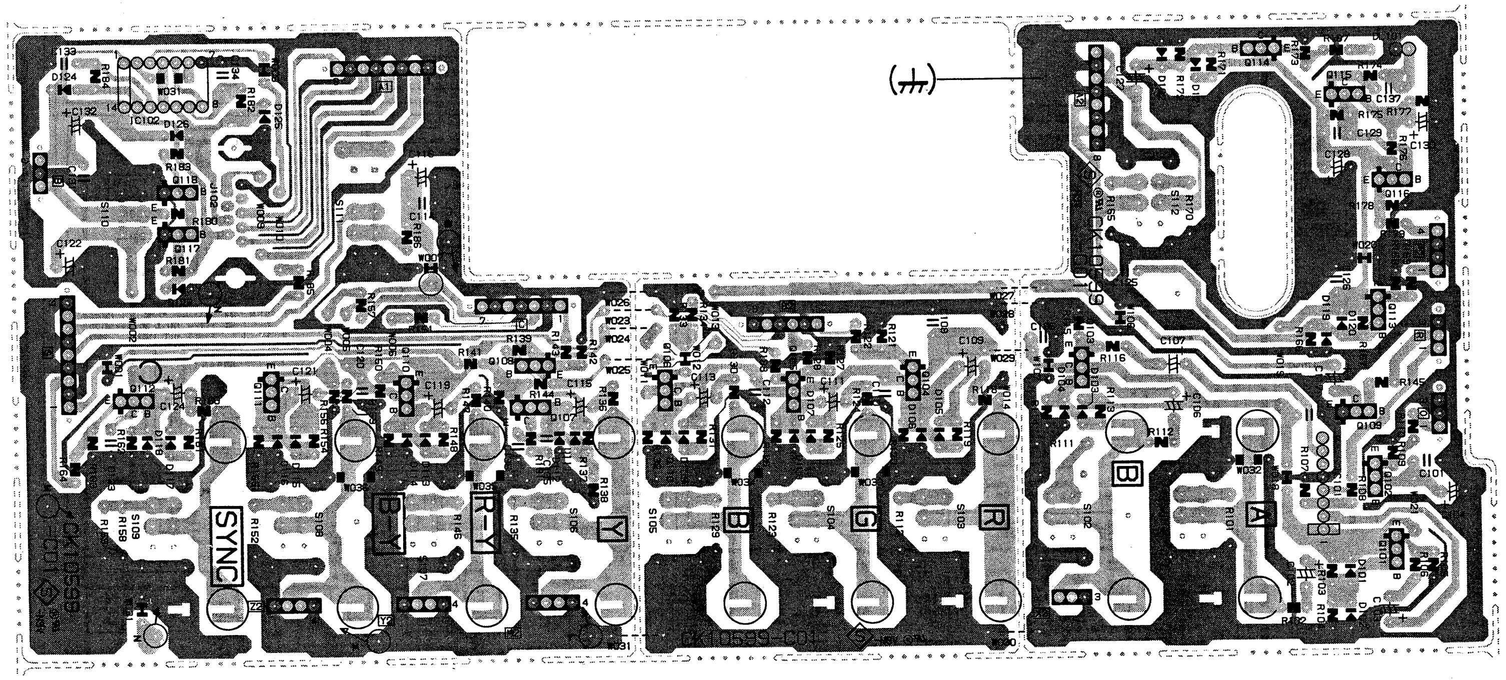
SIGNAL P.C. BOARD FX-1009A (1/2)



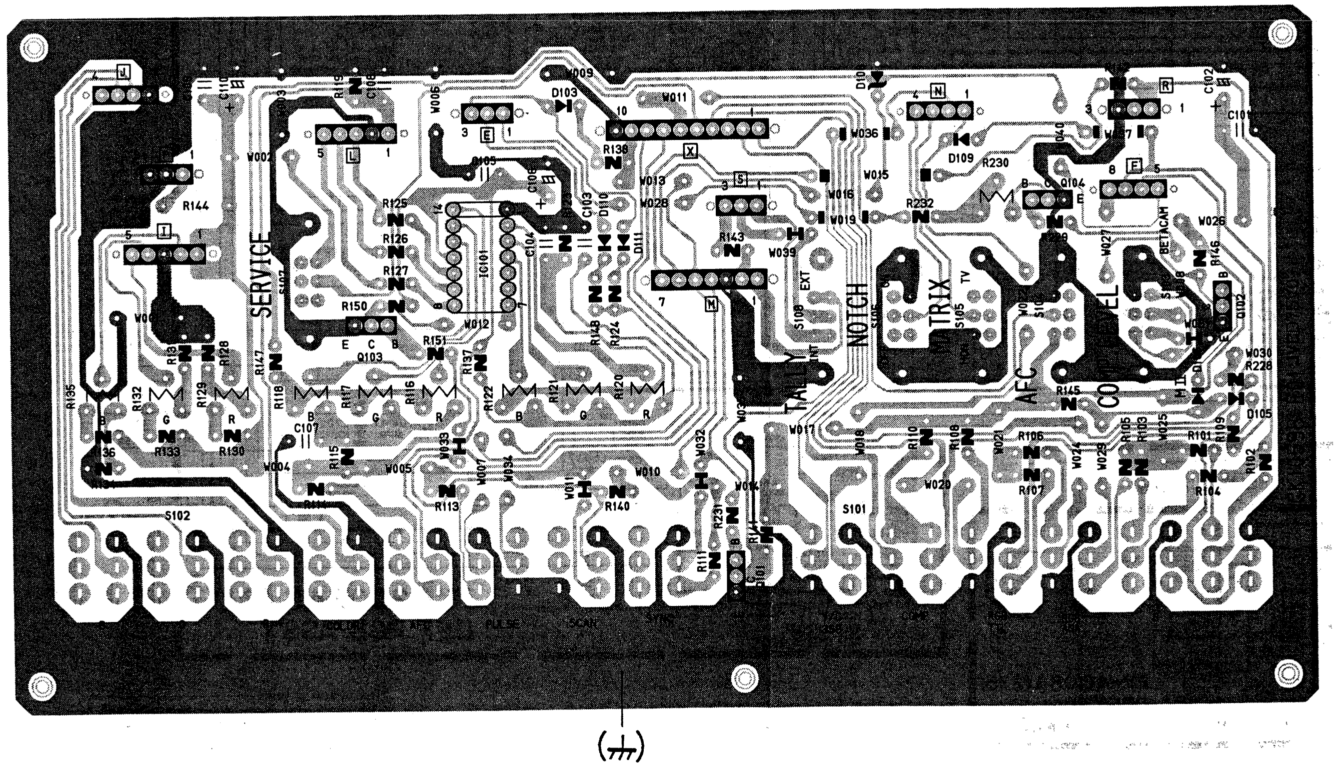
CRT SOCKET P.C. BOARD FX-1009A (2/2)


CK10597-E01
CMK-81X
TP-HB
PK
BK
GK
G1
G2
H
CAU
BE SU
CRT EARTH
IS CONNECTED
EARTH TAB
THIS BOAD
IC302

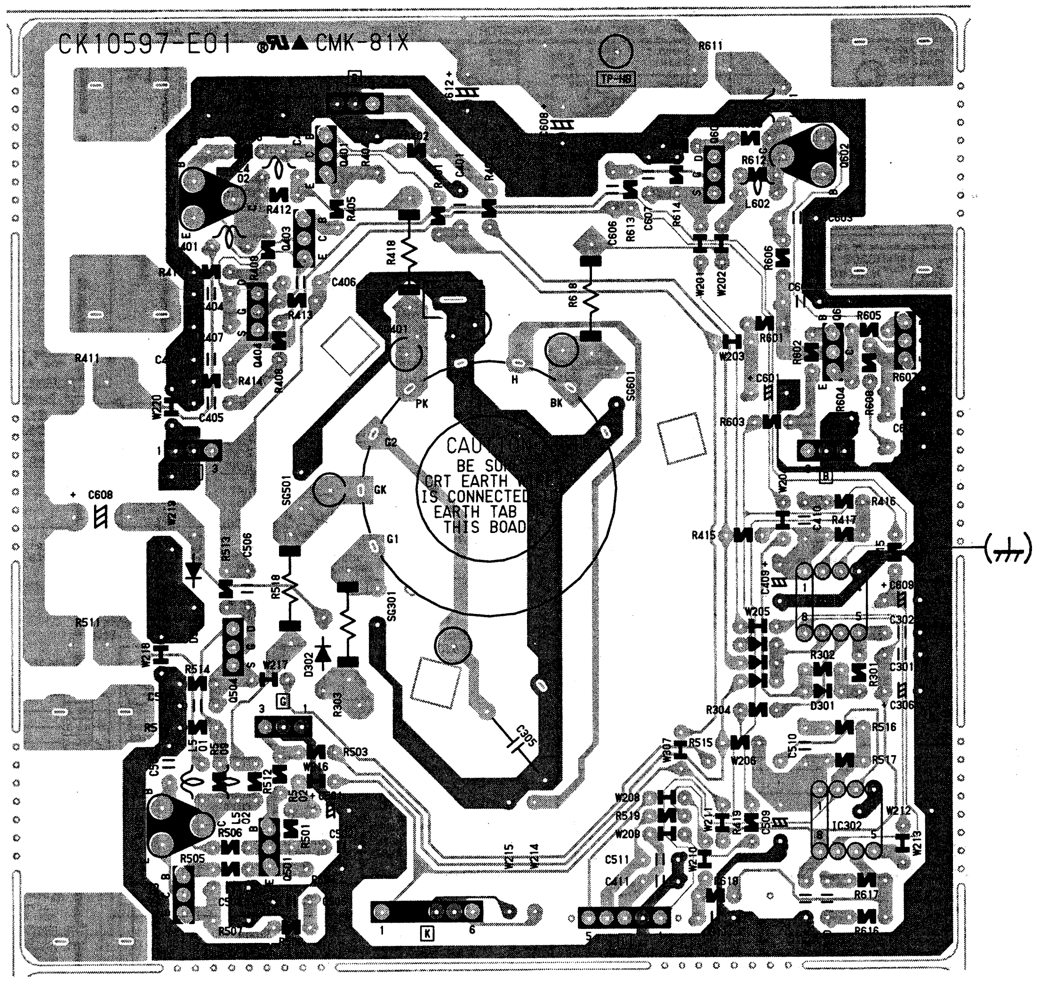
INPUT P.C. BOARD FX-6006A


SYNC
B-Y
R-Y
Y
B
G
R
B
A

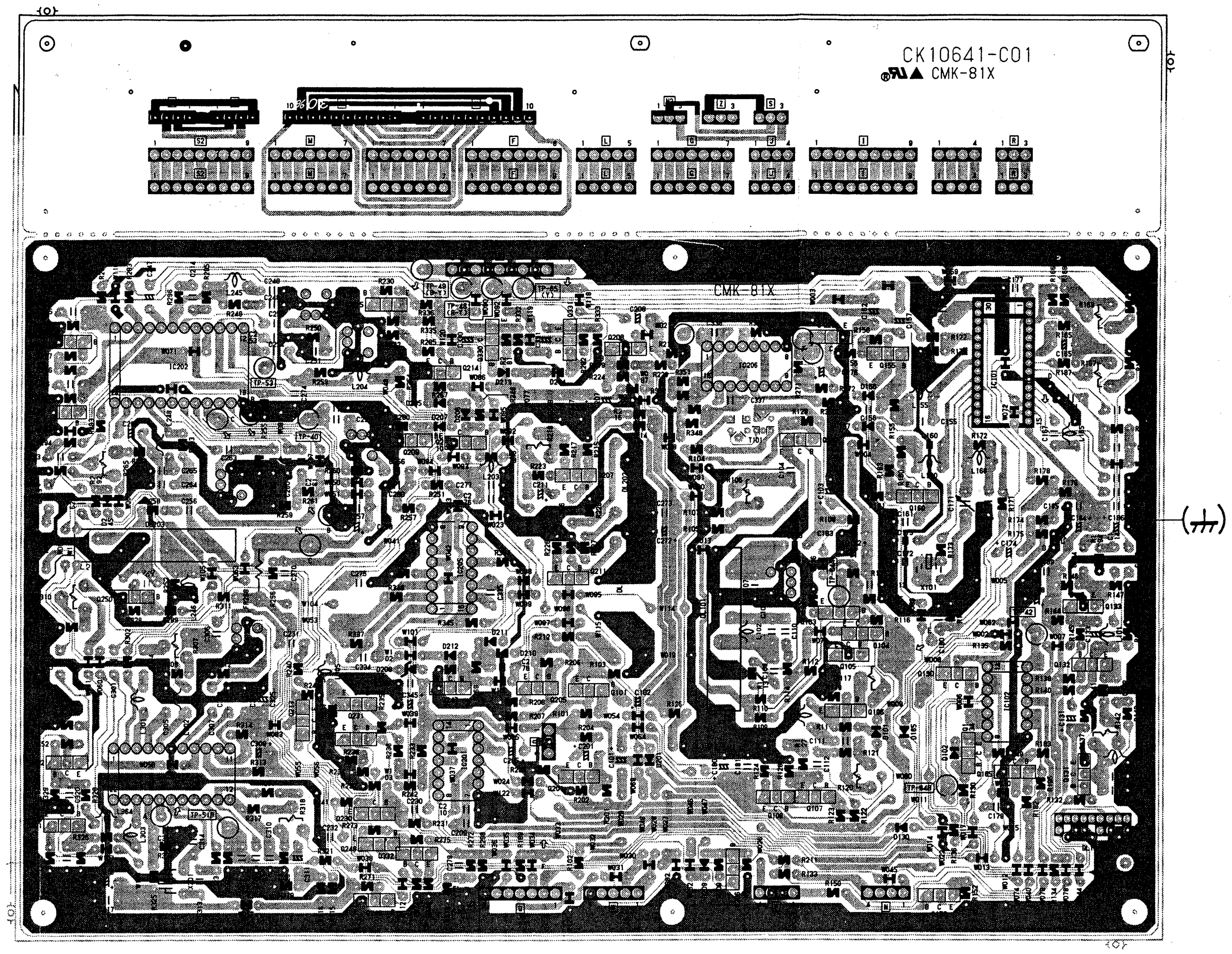
SWITCH P.C. BOARD FX-4008A


SERVICE
NOTCH
TRIX
AFC
IC101

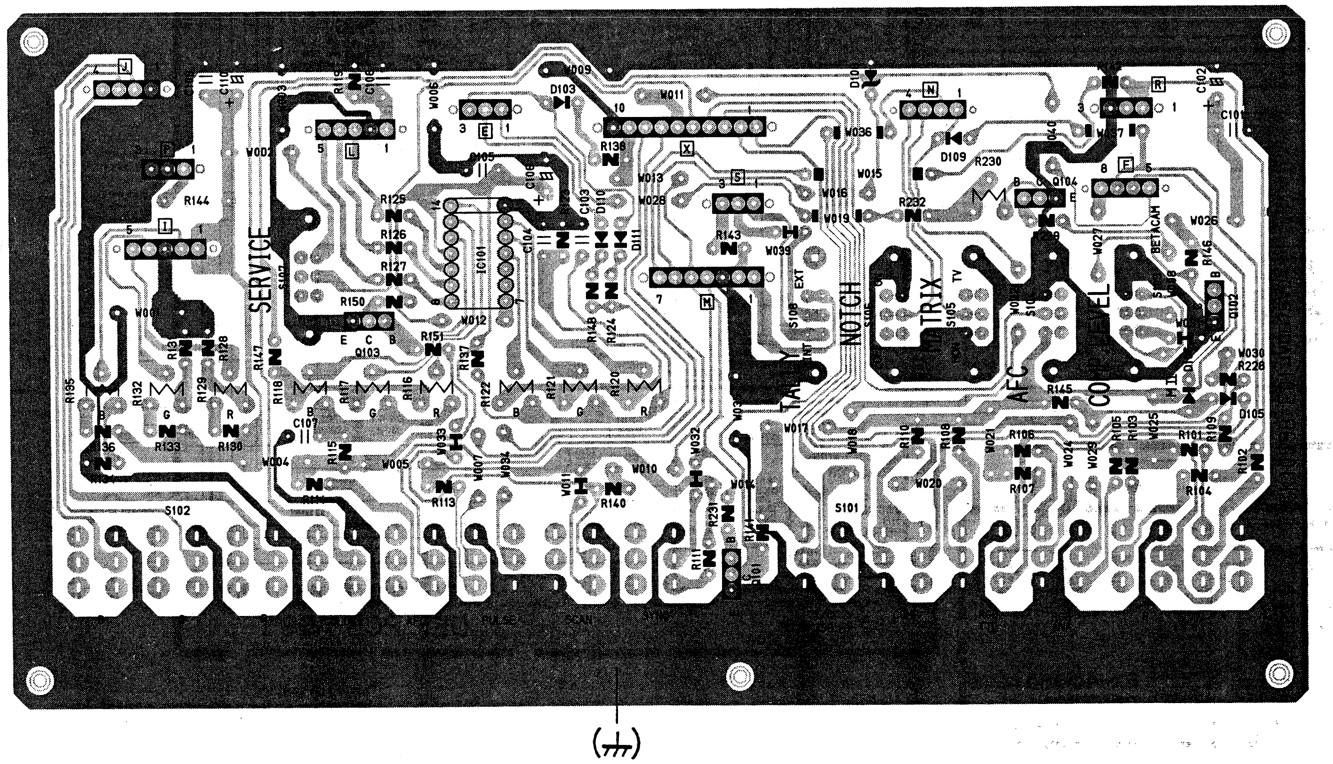
CRT SOCKET P.C. BOARD FX-1009A (2/2)


CK10597-E01 CMK-81X
CAUTION BE SURE CRT EARTH IS CONNECTED EARTH TAB THIS BOARD
TP-HB
PK
BK
G2
GK
G1
H

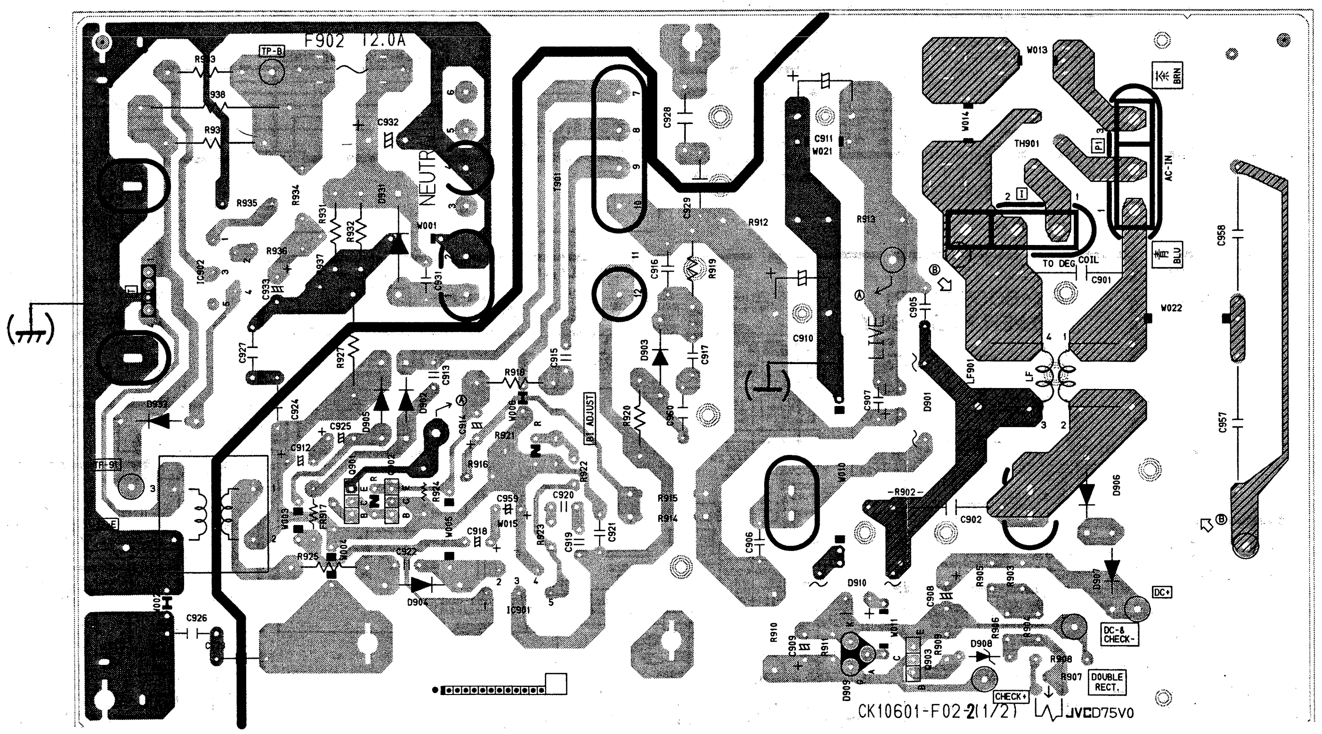
DECODER P.C. BOARD FX-8006A


CK10641-C01 CMK-81X
CMK-81X

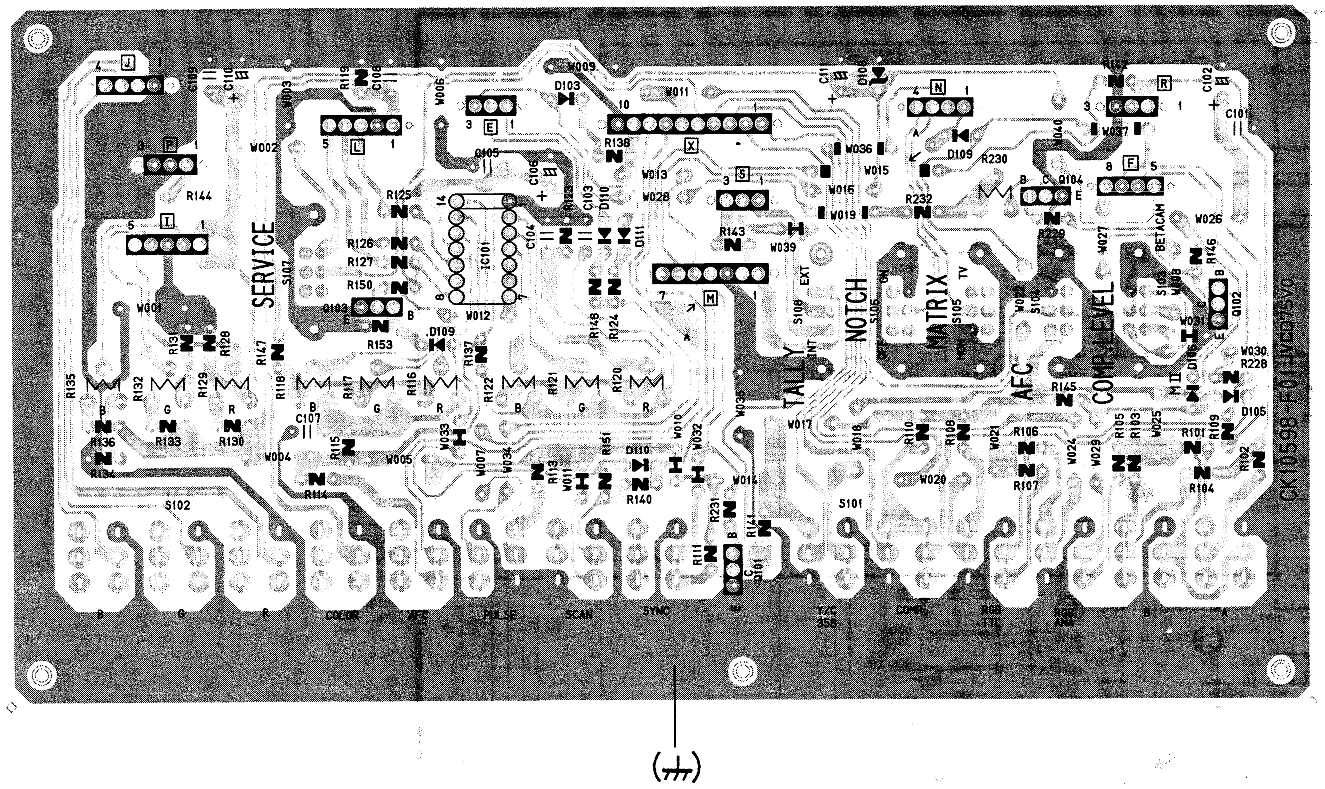
SWITCH P.C. BOARD FX-4008A

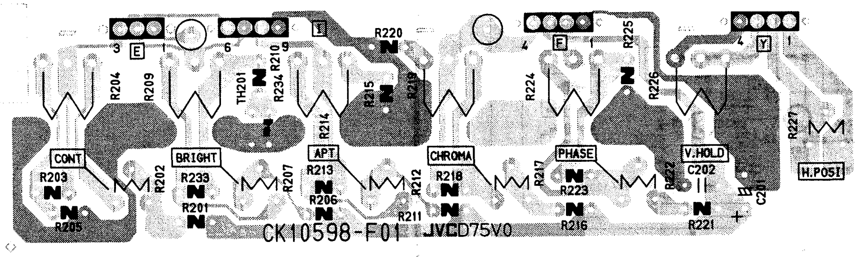

SERVICE
NOTCH
TRIX
AFC
EXT
TV
S101
S102

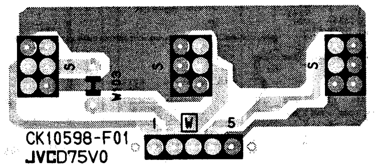
POWER P.C. BOARD FX-9005A


F902 T2.0A
TP-B
NEUTR
LIVE
TO DEG COIL
AC-IN
BRN
BLU
B ADJUST
DC+
DC-& CHECK-
CHECK+
DOUBLE RECT.
CK10601-F02-2(1/2) JVCD75V0

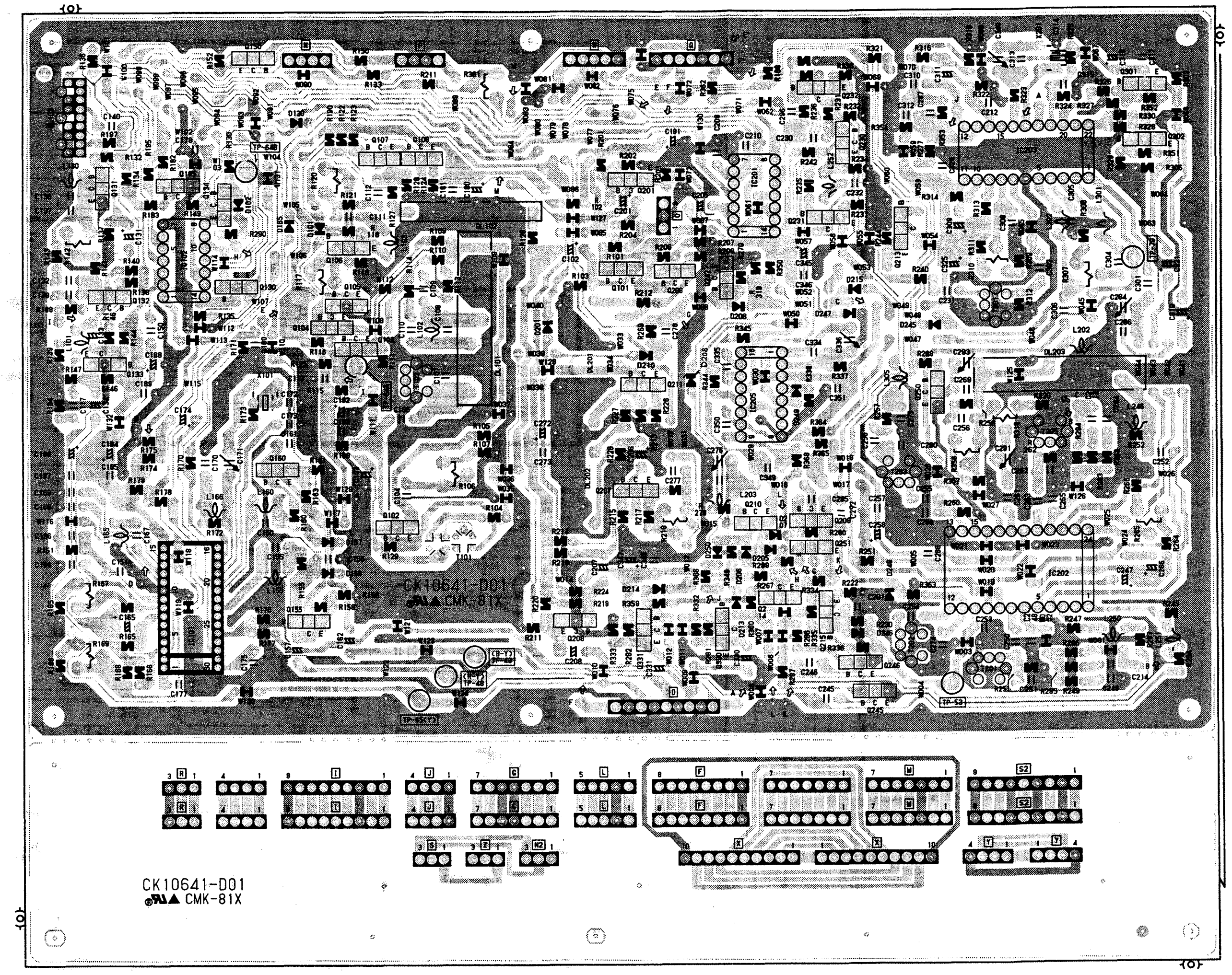
SWITCH P.C. BOARD FX-4008A

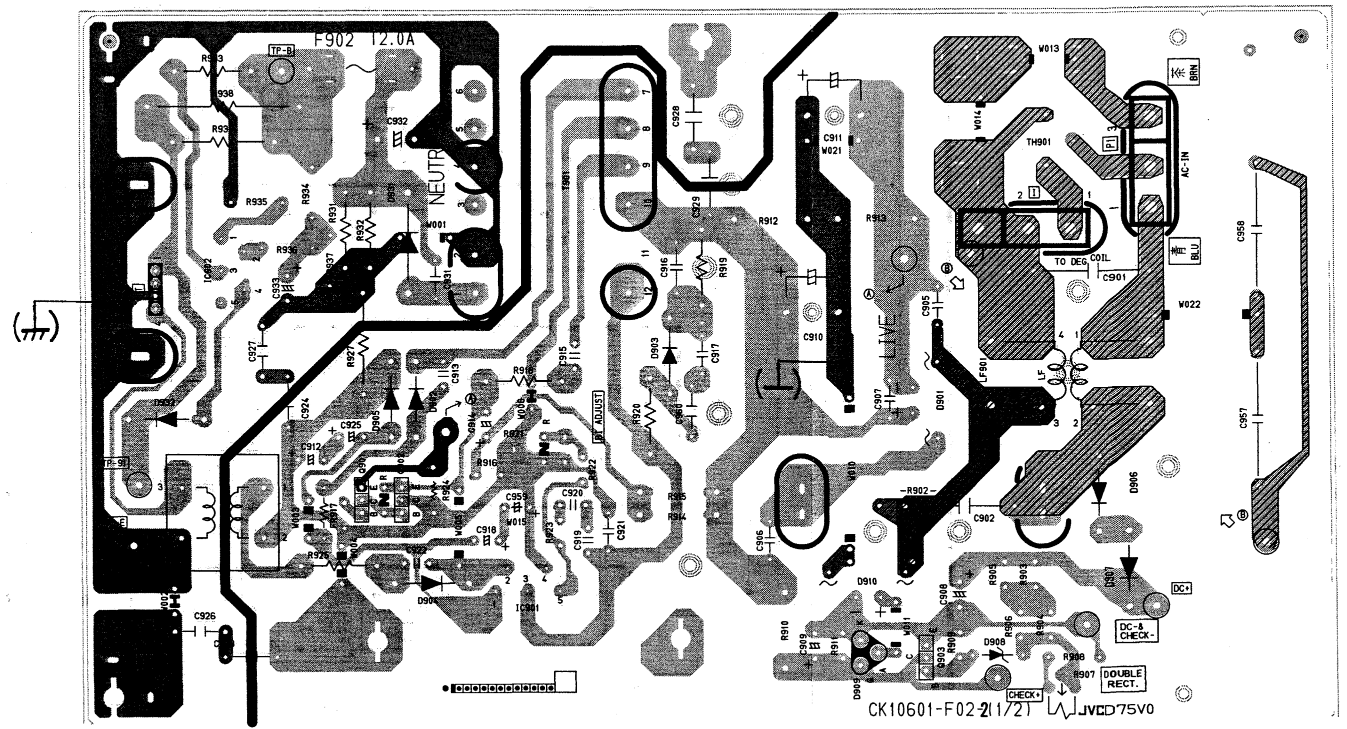

SERVICE
TALLY
NOTCH
MATRIX
AFC
COMP.LEVEL
IC101
S102
S101
B
G
R
COLOR
AFC
PULSE
SCAN
SYNC
Y/C 358
COMP.
RGB TTL
RGB ANA
CK10598-F01 JVCD75V0


CONT
BRIGHT
APT
CHROMA
PHASE
V.HOLD
H.POSI
CK10598-F01 JVCD75V0

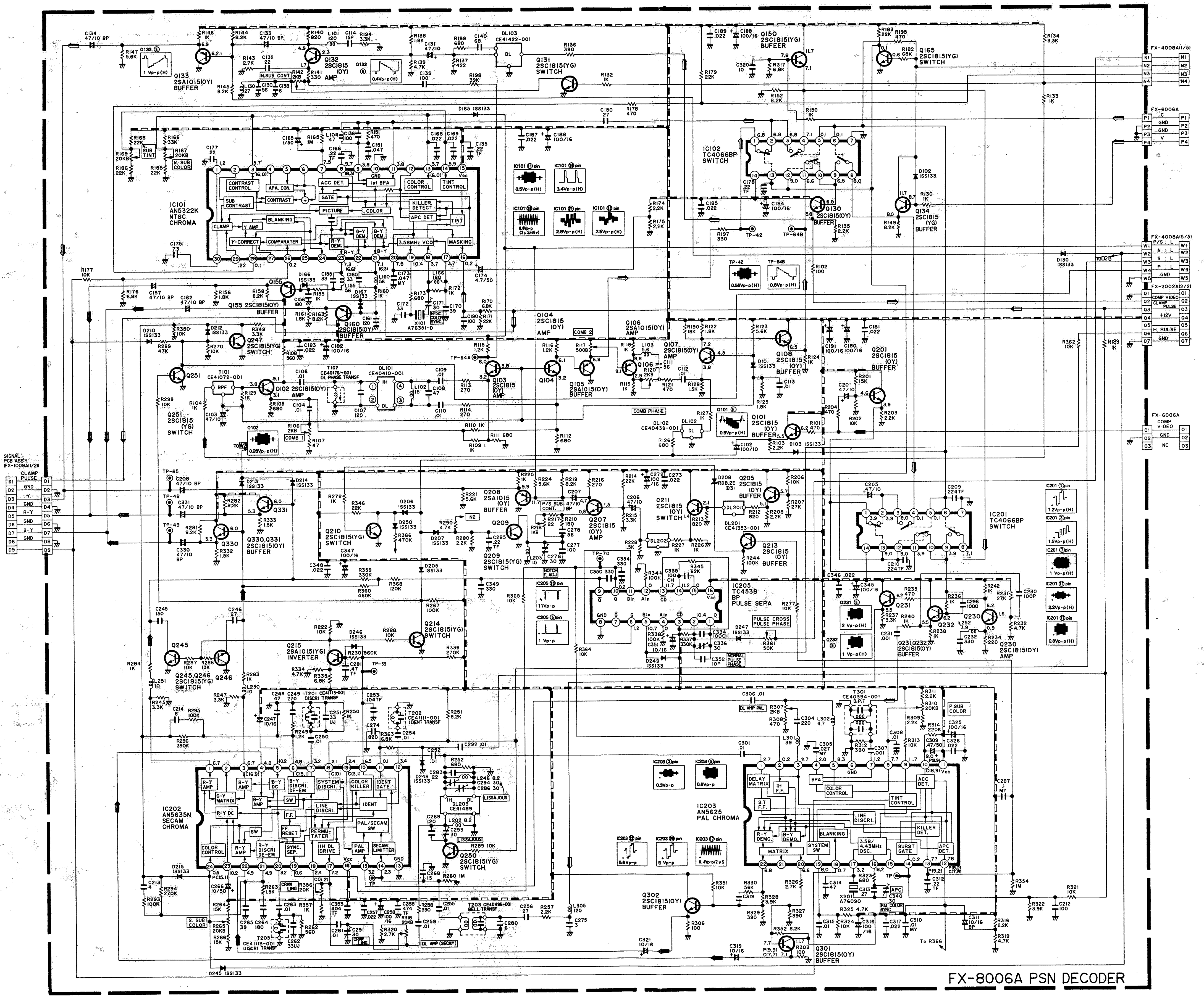

CK10598-F01
JVCD75V0

DECODER P.C. BOARD FX-8006A


CK10641-D01
CMK-81X
CK10641-D01
CMK-81X


F902 T2.0A
NEUTR
LIVE
TO DEG COIL
AC-IN
BRN
BLU
DC+
DC-& CHECK-
CHECK+
DOUBLE RECT.
CK10601-F02-2(1/2) JVCD75V0

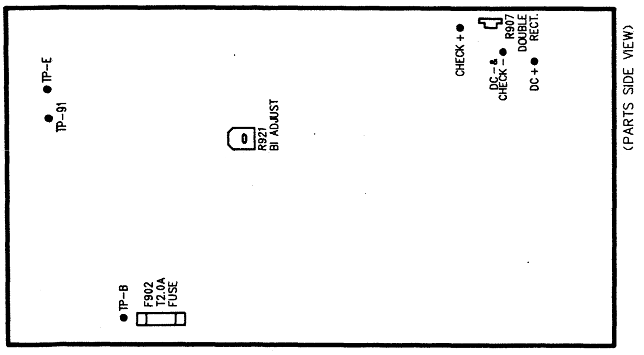
DECODER CIRCUIT


IC101
AN5322K
NTSC
CHROMA
IC102
TC4066BP
SWITCH
IC201
TC4066BP
SWITCH
IC202
AN5635N
SECAM
CHROMA
IC203
AN5625
PAL CHROMA
IC205
TC4538
BP
PULSE SEPA
Q133 2SA1015(OY) BUFFER
Q132 2SC1815 (OY) AMP
Q131 2SC1815(YG) SWITCH
Q150 2SC1815(YG) BUFFER
Q165 2SC1815(YG) SWITCH
Q130 2SC1815(OY) BUFFER
Q134 2SC1815 (YG) BUFFER
Q155 2SC1815(OY) BUFFER
Q160 2SC1815(OY) BUFFER
Q104 2SC1815 (OY) AMP
Q106 2SA1015(OY) AMP
Q107 2SC1815(OY) AMP
Q108 2SC1815 (OY) BUFFER
Q201 2SC1815 (OY) BUFFER
Q247 2SC1815(OY) SWITCH
Q251 2SC1815 (YG) SWITCH
Q102 2SC1815(OY) AMP
Q103 2SC1815 (OY) AMP
Q105 2SA1015(OY) BUFFER
Q101 2SC1815 (OY) BUFFER
Q330,Q331 2SC1815(OY) BUFFER
Q210 2SC1815(YG) SWITCH
Q208 2SA1015 (OY) BUFFER
Q209 2SC1815(YG) SWITCH
Q207 2SC1815 (OY) AMP
Q211 2SC1815 (OY) SWITCH
Q205 2SC1815 (OY) BUFFER
Q213 2SC1815 (OY) BUFFER
Q231,Q232 2SC1815(OY) BUFFER
Q230 2SC1815(OY) AMP
Q245,Q246 2SC1815(YG) SWITCH
Q215 2SA1015(YG) INVERTER
Q214 2SC1815(YG) SWITCH
Q250 2SC1815(YG) SWITCH
Q302 2SC1815(OY) BUFFER
Q301 2SC1815(OY) BUFFER
X101 A76351-D
X201 A76090
DL103 CE41422-001
DL101 CE40410-001
DL102 CE40459-001
DL201 CE41353-001
DL203 CE41489
T101 CE41072-001
T102 CE40175-001 DL PHASE TRANSF
T201 CE41113-001 DISCRI TRANSF
T202 CE41111-001 IDENT TRANSF
T203 CE40496-001 BELL TRANSF
T205 CE41113-001 DISCRI TRANSF
T301 CE40394-001
SIGNAL PCB ASSY FX-1009A(1/2)
FX-4008A(1/5)
FX-6006A
FX-4008A(5/5)
FX-2002A(2/2)
FX-6006A
COMP VIDEO
CLAMP PULSE
H. PULSE
+12V
GND
NC
N.SUB CONT
H.SUB TINT
SUB TINT
COMB 1
COMB 2
COMB PHASE
P/S SUB CONT.
NOTCH C ADJ
NORMAL PULSE PHASE
DL AMP PAL
S. SUB COLOR
P.SUB COLOR
DL AMP (SECAM)
FX-8006A PSN DECODER

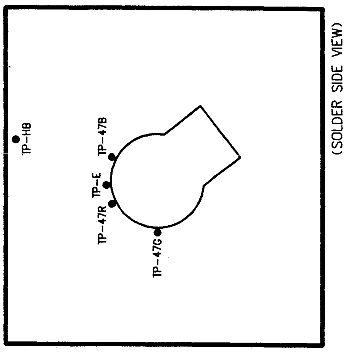
ALIGNMENT LOCATION

⇧ TOP

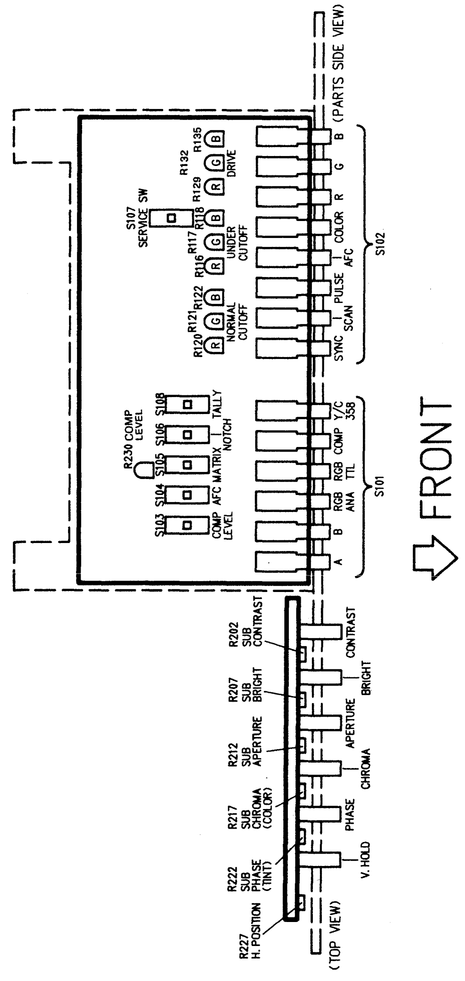
■ FX-9005A (POWER P.C.B.)


TP-91
TP-E
R921 BI ADJUST
TP-B
F902 T2.0A FUSE
CHECK +
DC-& CHECK -
DC +
R907 DOUBLE RECT.
(PARTS SIDE VIEW)

■ FX-1009A (CRT SOCKET P.C.B.)

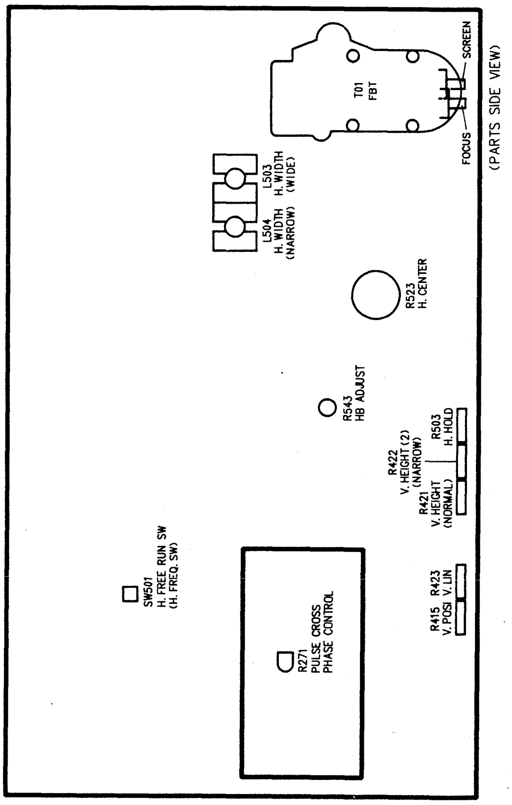

TP-HB
TP-47B
TP-E
TP-47R
TP-47G
(SOLDER SIDE VIEW)

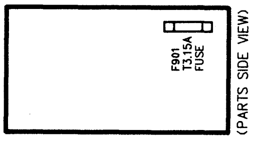
■ FX-4008A (CONTROL/SWITCH P.C.B.)


(PARTS SIDE VIEW)
S107 SERVICE SW
R120 R121 R122 NORMAL CUTOFF
R116 R117 R118 UNDER CUTOFF
R129 R132 R135 DRIVE
R G B
SYNC SCAN PULSE AFC COLOR R G B
S102
R230 COMP LEVEL
S103 S104 S105 S106 S108
COMP LEVEL AFC MATRIX NOTCH TALLY
A B RGB ANA RGB TTL COMP COMP 358 Y/C
S101
FRONT
R202 SUB CONTRAST
R207 SUB BRIGHT
R212 SUB APERTURE
R217 SUB CHROMA (COLOR)
R222 SUB PHASE (TINT)
R227 H. POSITION
CONTRAST
BRIGHT
APERTURE
CHROMA
PHASE
V. HOLD
(TOP VIEW)

⇧ FRONT

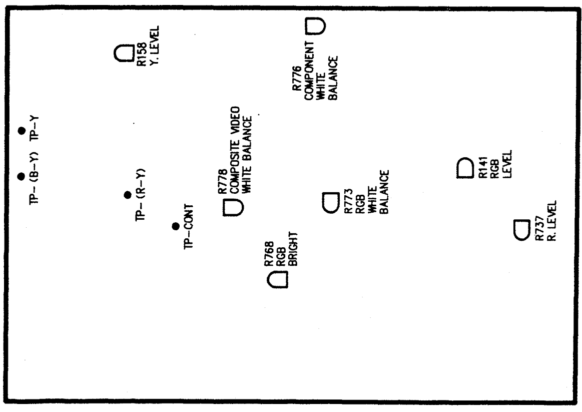
■ FX-9005A (L. FILTER P.C.B.) **■ FX-2002A (DEF./PROTECTOR P.C.B.)**


T01 FBT
SCREEN
FOCUS
(PARTS SIDE VIEW)
L503 H. WIDTH (WIDE)
L504 H. WIDTH (NARROW)
R523 H. CENTER
R543 HB ADJUST
R503 H. HOLD
R422 V. HEIGHT (2) (NARROW)
R421 V. HEIGHT (NORMAL)
R423 V. LIN
R415 V. POSI
SW501 H. FREE RUN SW (H. FREQ. SW)
R271 PULSE CROSS PHASE CONTROL

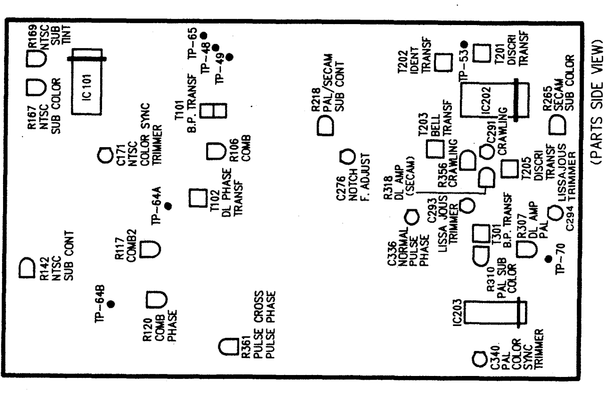

F901 T3.15A FUSE
(PARTS SIDE VIEW)

⇧ TOP

■ FX-1009A (SIGNAL P.C.B.)


TP-(B-Y)
TP-Y
TP-(R-Y)
TP-CONT
R158 Y. LEVEL
R776 COMPONENT WHITE BALANCE
R778 COMPOSITE VIDEO WHITE BALANCE
R768 RGB BRIGHT
R773 RGB WHITE BALANCE
R141 RGB LEVEL
R737 R. LEVEL

■ FX-8006A (DECODER P.C.B.) (SOLDER SIDE VIEW)


R169 NTSC SUB TINT
R167 NTSC SUB COLOR
IC 101
C171 NTSC COLOR SYNC TRIMMER
T101 B.P. TRANSF
TP-65
TP-48
TP-49
R106 COMB
T102 DL PHASE TRANSF
TP-64A
R142 NTSC SUB CONT
R117 COMB2
TP-64B
R120 COMB PHASE
R361 PULSE CROSS PULSE PHASE
R218 PAL/SECAM SUB CONT
C276 NOTCH F. ADJUST
R318 DL AMP (SECAM)
C293 LISSA JOUS TRIMMER
R356 CRAWLING
T203 BELL TRANSF
T202 IDENT TRANSF
IC202
C291 CRAWLING
TP-53
T201 DISCRI TRANSF
R265 SECAM SUB COLOR
T205 DISCRI TRANSF
C294 LISSAJOUS TRIMMER
C336 NORMAL PULSE PHASE
T301 B.P. TRANSF
R307 DL AMP PAL
R310 PAL SUB COLOR
TP-70
IC203
C340 PAL COLOR SYNC TRIMMER
(PARTS SIDE VIEW)